# LANDWorksCAD® v.6 Stand-Alone Software

## Professional Landscape Design Software

## Reference and User Manual

CAD International

www.CAD.com.au – www.CADInternational.com

© 2006 - 2013 - All rights reserved

*This page is intentionally blank*

## Table of Contents


LANDWorksCAD® v.6 Stand-Alone Software ..... 1

Introduction ..... 6

- Welcome ..... 6
- About this Manual ..... 7
- Disclaimer ..... 9

Overview ..... 10

- The LANDWorksCAD Commands ..... 10
- The Plant Database ..... 11

Command Details ..... 12

- Plant Command Categories ..... 13
  - Concept Plants ..... 13
  - Existing Plants ..... 13
  - Proposed Plants ..... 13
- Common Plant Operations ..... 14
  - Selecting a Plant ..... 14
  - Inserting a selected Plant ..... 17
  - Searching Plants ..... 28
  - Replacing Plants ..... 30
  - Plant Palettes ..... 33
  - Edit the Plant Database from LANDWorksCAD ..... 46
- Labelling Plants ..... 59
  - Label Concept Plants ..... 59
  - Label Existing Plants ..... 64
  - Label Proposed Plants ..... 72
- Plant Schedules ..... 91
  - Existing Plant Schedule ..... 91
  - Proposed Plant Legend ..... 94
- Plant Display Switching ..... 106
  - Plant ..... 107
  - Shadows ..... 108
  - Shadow Figure Settings ..... 109
- Tally ..... 112
- Insert Grid Lines ..... 114
  - X Spacing ..... 115
  - Y Spacing ..... 115
  - X Extension ..... 115
  - Y Extension ..... 115
  - Text Size ..... 115
  - Circle Text ..... 115
  - Labels Between Grid Lines ..... 115
  - Inserting the Grid ..... 116
- Set Heights ..... 117

DTM Height ..... 118
Text Size ..... 118
Scale Text by the Plot Scale ..... 119
Set Height ..... 119
Show Heights ..... 119
Deleting Assigned Heights ..... 120
Insert DTM ..... 121
Contour Point Spacing ..... 122
Mesh Size Control ..... 123
DTM Layer ..... 125
DTM Colour ..... 126
Insert DTM button ..... 126
Insert DTM with boundary button ..... 128
Modify DTM ..... 130
Height Parameter ..... 130
Area Parameter ..... 131
Insert Batter ..... 134
Angle ..... 136
Mesh Size ..... 137
Inserting the Batter ..... 137
Insert Contours ..... 138
Spacing ..... 139
Highlighting Frequency ..... 139
Text Size ..... 139
Scale Text by the Plot Scale ..... 140
Inserting the Contours ..... 140
Adjust Plant Heights ..... 142
Figure Height ..... 143
Text Size ..... 143
Scale Text by the Plot Scale ..... 144
Show Heights ..... 144
Insert 3D Plants ..... 145
Show 2D View ..... 145
Show 3D View ..... 147
Current Size ..... 150
Update Age ..... 150
Inserting the Plants ..... 151
Insert Sun Light ..... 152
Date ..... 153
Time ..... 153
City ..... 155
Longitude ..... 156
Latitude ..... 156
Time Zone ..... 157
Inserting the Sun ..... 157
North Direction Button ..... 158
About ..... 159

Appendices ..... 160
Appendix 1 – The LANDWorksCAD Plant Database ..... 161
Structure ..... 161
Format ..... 161
Rows ..... 162
Columns ..... 163
Existing Plants worksheet ..... 163
Concept Plants worksheet ..... 164
Plants worksheet ..... 166
Appendix 2 – Editing the Plant Database in Excel ..... 173
Editing Existing Plant Data ..... 173
Adding a Plant ..... 174
Deleting a Plant ..... 175
Re-Arranging/Moving Plants ..... 176
Adding a New Data Item (Column) ..... 176
Deleting an Existing Data Item (Column) ..... 177
Re-Arranging/Moving Data Items (Columns) ..... 177
Appendix 3 – Adding Plants to the Database ..... 178
Directly from LANDWorksCAD ..... 178
Editing the Landworksplantdatabase.xls Excel file ..... 183
Appendix 4 – Working with the Selection Data ..... 185
Displaying the Hidden Selection Data ..... 186
Editing the Existing Selection Data ..... 190
Assigning Selection Data to New Columns ..... 194
Removing the Selection Data ..... 195
Appendix 5 – Sorting the Plant Database in Excel ..... 197

# Introduction

## Welcome

LANDWorksCAD is easy-to-use world-class, professional design software specifically created with Landscape Designers and Landscape Architects' in mind. Use LANDWorksCAD to create sketch plans, concept plans, planting plans, hard works plans, construction details, plant schedules, contour plans and more.

V6 represents a significant update to previous versions with many improvements and enhancements over V5. Let LANDWorksCAD-V6 help you design your landscapes "better, faster and funner™".

We are passionate about the software we produce for you, so please drop us a line and let us know your thoughts. We'd love to hear from you. ☺ If you find any anomalies in this manual please let us know so that we may correct it immediately for other users.

Email to info@cad.com.au

# About this Manual

This manual provides information specific only to the landscape functions and commands. The core CAD software (RealCAD, AutoCAD or Bricscad) provide the platform that the landscape functions use to run on. For information relating to the core CAD functions you must refer to the core CAD manuals and user guides.

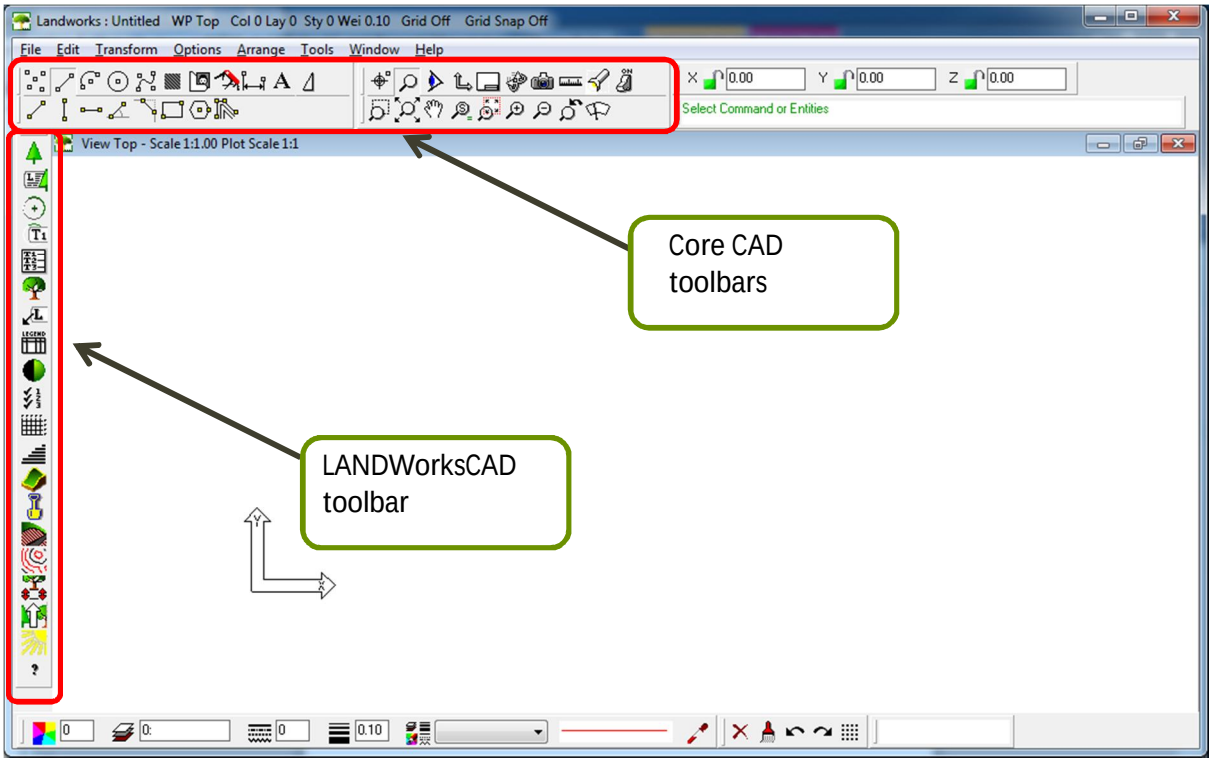

Landworks : Untitled WP Top Col 0 Lay 0 Sty 0 Wei 0.10 Grid Off Grid Snap Off
File Edit Transform Options Arrange Tools Window Help
Select Command or Entities
View Top - Scale 1:1.00 Plot Scale 1:1
Core CAD toolbars
LANDWorksCAD toolbar

Fig. 1 – LANDWorksCAD User Interface

## Notes

References to 3D tasks and the Z axis in this manual do not apply if you have purchased the 'LT' (2D) version of the program.

The terms "Drawing" and "Model" are interchangeable in this manual and the words "Ticked" and "Checked" are both used to describe the ✓ (ticks) in dialog box options

This manual refers to measurements in millimeters. All other metric and USA or Imperial units are also available.

Even if you've been using LANDWorksCAD for a while, take the time to read through this manual as V6 is different. You'll find new ways of doing things and shortcuts you may not have thought of.

Have fun ☺

# Disclaimer

All care has been taken to ensure the accuracy of the information contained in this document, however no warranty expressed or implied is given that this information is either current or accurate and should not be relied on for any purpose.

Copyright© 2006 - 2013 CAD International. All Rights Reserved.

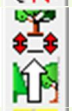
No part of this publication may be reproduced or transmitted in any form or by any means, electronic or mechanical, including photocopying, recording or by any information or storage retrieval system, without express permission in writing from CAD International.

RealCAD and LANDWorksCAD are trademarks of CAD International. All other trademarks are the property of their respective owners.

# Overview

## The LANDWorksCAD Commands

This section provides a quick overview of LANDWorksCAD; the commands in the menu and the database of plants that is supplied.

| | | Pro | LT |
|---|---|---|---|
| | Used to insert and label plants at a concept stage of the design. | ✓ | ✓ |
| | Used to insert, label and list plants that already exist on site. | ✓ | ✓ |
| | Used to insert, label and list plants that are proposed for the design. | ✓ | ✓ |
| | Used to change how the plants look on the plan. | ✓ | ✓ |
| | Used to extract quantities, lengths and areas. | ✓ | ✓ |
| | Used to lay a reference grid over the design. | ✓ | ✓ |
| | Used to create and edit 3D terrain. Digital terrain models (DTM). | ✓ | ✗ |
| | Used to generate contour lines from the DTM | ✓ | ✗ |
|  | Used to generate 3D or elevation plants on the DTM. | ✓ | ✗ |
| | Used to insert the Sun, for generating shadows on a DTM. | ✓ | ✗ |
| | Tells you the current version of LANDWorksCAD. | ✓ | ✓ |

# The Plant Database

LANDWorksCAD is supplied with an extensive plant database of thousands of plants allowing you to quickly and easily select the plants you want for your design. You can edit these plants and add your own thus allowing you to easily set up plants that are specific to you and your needs. The database contains plants from all over the globe. You will need to be selective in choosing plants that are appropriate in your area.

The following points give you some introductory information about the database.

The database:

- is a Microsoft Excel spreadsheet
- has a simple format and contains no complex formulas
- is called LandworksPlantDatabase.xls (it must be called this)
- is stored in
    - C:\Users\Public\LANDWorksCAD-v6 folder (Windows 8, Windows 7 and Vista)
    - C:\Documents and Settings\All Users\LANDWorksCAD-v6 folder (Windows XP)

  (It must reside there)
- can be edited within LANDWorksCAD or may be edited in Excel directly
- has some columns and rows that must not be altered
- requires a full version of Excel and not MS 'Office Starter' versions
- operates using Windows operating system and Windows version of Excel

For detailed instructions on how to work with the database, refer to the Appendices at the end of this manual.

# Command Details

This section explains each command in the LANDWorksCAD menu in detail.

It should be noted that the LANDWorksCAD menu does not necessarily have to appear on the left hand side of the screen as shown in previous images. This is the default position only. It can be moved anywhere on the screen and can also docked to the edges of the window, just like any standard Windows' menu.

# Plant Command Categories

There are three distinct types of planting in LANDWorksCAD and the software treats each type differently.

## Concept Plants

Concept Plants represent plants in the early conceptual design stage rather than at the detail stage. For example, the plant symbol might be used to represent a tall tree or leafy shrub before any particular tall tree or shrub species has been decided upon.

Concept Plants Commands

| | | |
|---|---|---|
| | Insert Concept Plants | ✓ |
| | Label Concept Plants | ✓ |

## Existing Plants

Existing Plants represent plant(s), tree(s), etc. in your landscape plan that already exists on-site.

Existing Plants Commands

| | | |
|---|---|---|
| | Insert Existing Plants | ✓ |
| | Label Existing Plants | ✓ |
| | Existing Plant Schedule | ✓ |

## Proposed Plants

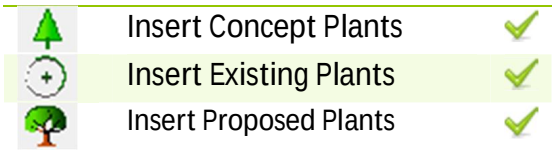
Proposed Plants represent the specific plant(s) you are proposing in your design.

Concept Plants Commands

| | | |
|---|---|---|
| | Insert Proposed Plants | ✓ |
| | Label Proposed Plants | ✓ |
| | Proposed Plant Legend | ✓ |

# Common Plant Operations

## Selecting a Plant




The "Selected Items" area at the top of the dialog box lists the plants defined in the "Concept Plants", "Existing Plants" and "Concept Plants" tabs of your Excel plant database file. This file is called *LandworksPlantDatabase.xls* and is found in the LANDWorksCAD folder on your computer.

Refer to Appendix 1 – The LANDWorksCAD Plant Database for more details.

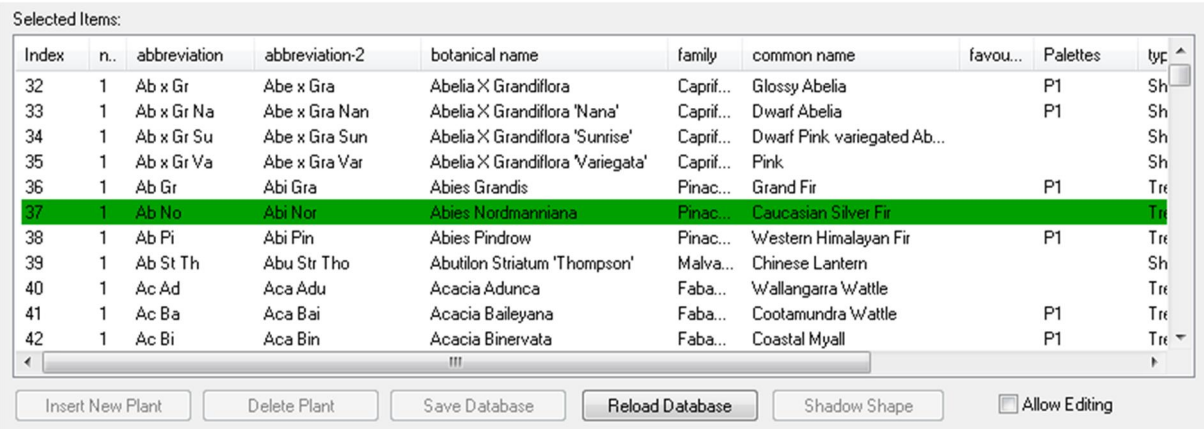

Selected Items:
Index n.. abbreviation abbreviation-2 botanical name family common name favou... Palettes typ
32 1 Ab x Gr Abe x Gra Abelia X Grandiflora Caprif... Glossy Abelia P1 Sh
33 1 Ab x Gr Na Abe x Gra Nan Abelia X Grandiflora 'Nana' Caprif... Dwarf Abelia P1 Sh
34 1 Ab x Gr Su Abe x Gra Sun Abelia X Grandiflora 'Sunrise' Caprif... Dwarf Pink variegated Ab... Sh
35 1 Ab x Gr Va Abe x Gra Var Abelia X Grandiflora 'Variegata' Caprif... Pink Sh
36 1 Ab Gr Abi Gra Abies Grandis Pinac... Grand Fir P1 Tr
37 1 Ab No Abi Nor Abies Nordmanniana Pinac... Caucasian Silver Fir Tr
38 1 Ab Pi Abi Pin Abies Pindrow Pinac... Western Himalayan Fir P1 Tr
39 1 Ab St Th Abu Str Tho Abutilon Striatum 'Thompson' Malva... Chinese Lantern Sh
40 1 Ac Ad Aca Adu Acacia Adunca Faba... Wallangarra Wattle Tr
41 1 Ac Ba Aca Bai Acacia Baileyana Faba... Cootamundra Wattle P1 Tr
42 1 Ac Bi Aca Bin Acacia Binervata Faba... Coastal Myall P1 Tr
Insert New Plant
Delete Plant
Save Database
Reload Database
Shadow Shape
Allow Editing

Fig. 2 - Selected Items list from Insert Proposed Plants command

### Note

The buttons just below the selected items area, i.e., "Insert New Plant", "Delete Plant", etc. let you edit your plant database from within LANDWorksCAD and are explained later in the section entitled Edit Plants from Within LANDWorksCAD.

Scrolling down will show more plants; scrolling sideways will show more data for the plants. The information shown in this dialog is identical to that in the Excel file itself.

Click once anywhere in the row of data for the plant you want. Preview images of the selected plant will be displayed in the bottom, right hand boxes. Not all of the boxes will necessarily display previews; it depends on what has been defined in your Excel plant database.

The Plan previews show the ways the plan view of the plant can be displayed in the drawing. You can switch between these displays types whenever you want to, even after the plant has been inserted – refer to Plant Display Switching.

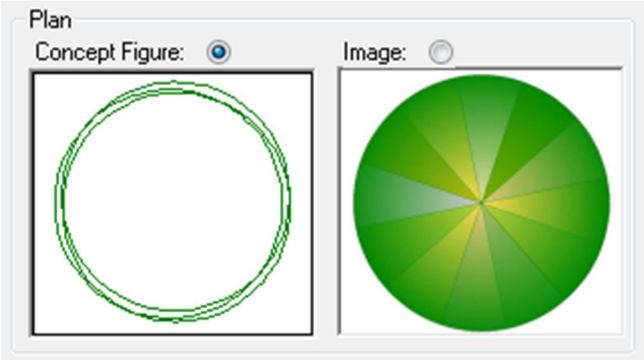



Fig. 3 – Plan Preview on Insert Concept Plants. Concept Figure (Basic Figure) and Image

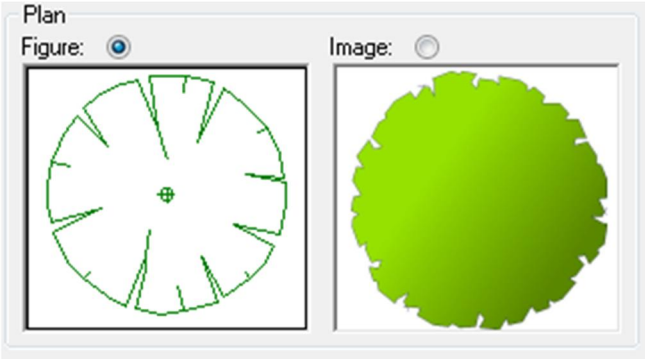



Fig. 4 – Plan Preview on Insert Proposed Plants. Figure (Basic Figure) and Image

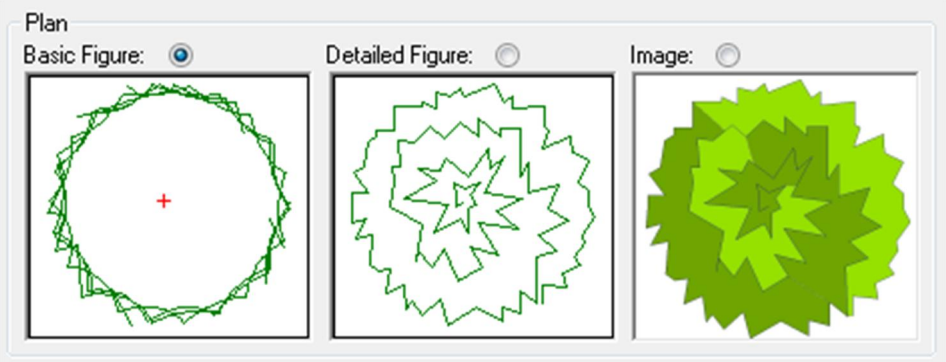



Fig.5 – Plan Preview on Insert Proposed Plants. Basic Figure, Detailed Figure and Image

## Note

Note that Concept and Existing Plants can have 2 plan representations: Basic Figure and Image. Proposed Plants can have 3 plan representations: Basic Figure, Detailed Figure and Image.

The Figure preview is of a CAD drawing file, i.e., it must have been drawn in LANDWorksCAD or created in another CAD program and then imported and saved in LANDWorksCAD. In AutoCAD or Bricscad these are known as “blocks”.

The Image preview is of a JPG, PNG or BMP (bitmap) format file. This could be an actual photograph of the plant or it could be an artistic representation that has been created outside of LANDWorksCAD using image editing software such as PhotoImpact, Photoshop or similar. It can also be hand drawn and scanned. The JPG format is preferred because file sizes are smaller.

Having several ways of displaying the plan view of each plant gives you flexibility in how you present your drawings. You can have a simple and uncomplicated line drawing, a detailed highly descriptive line drawing or a more picturesque appearance. As stated earlier, you can switch between styles whenever you want to.

Likewise it is up to you to decide if the bitmap image is an actual photograph, hand drawn and scanned image or a computer generated one.

All the display types do not have to be set for every plant although you must have at least one or nothing will be displayed on the screen.

The display type can be selected by clicking in the white selection dot above the preview so that a smaller black dot appears within it.

The information explained above also pertains to the Elevation/3D previews; the Figures are LANDWorksCAD drawing files and the Image is a JPG, PNG or BMP file.

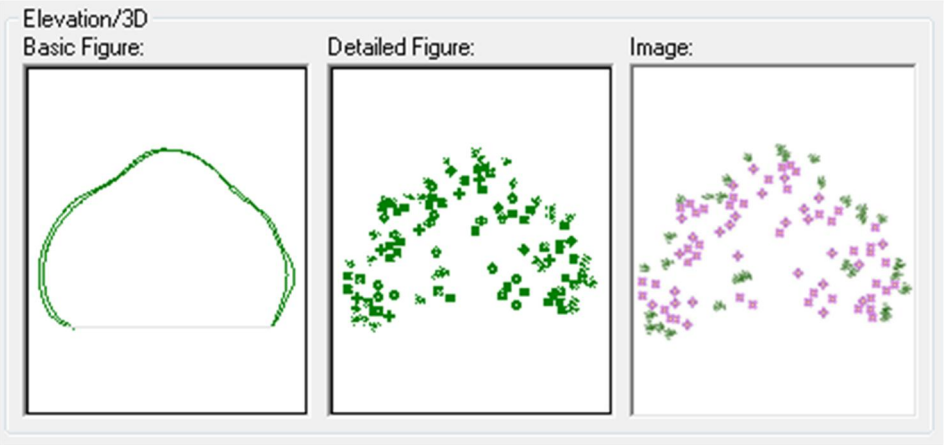
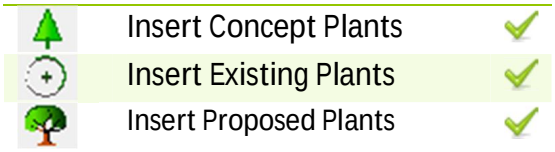



Fig.6 – Elevation/3D Preview on Insert Proposed Plants. Basic Figure, Detailed Figure and Image

## Note

The Elevation/3D Figures are not inserted using this command. They are generated automatically via the Insert 3D Plants command. You can also simply use regular Figure(Block) insertion methods for these.

## Inserting a selected Plant




Inserting the selected concept, existing or proposed plant is a two-step process:

1. Select the diameter of the plant

   The diameter of the plant can be selected from the Diameter box, as shown below:

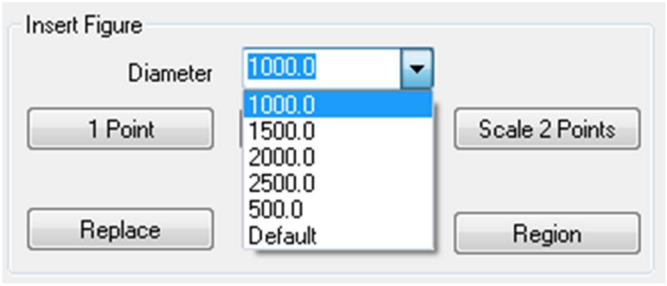



Fig.7 –Insert Proposed Plants. Insert Figure Diameter selection

   If the desired diameter is not listed it can simply be typed directly into the box.

   If you select Default the plant will be inserted at the size it was originally drawn. Typically this is about 1000mm Dia.

2. Insert the plant using the appropriate insertion method

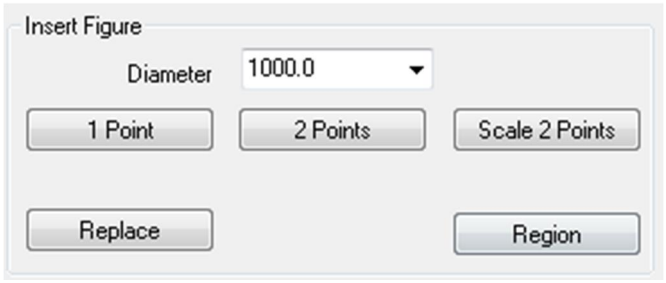



Fig.8 –Insert Proposed Plants Insertion Methods: 1 Point, 2 Points, Scale 2 Points or Region

## Inserting the plant using the Appropriate Insertion Method

Once the diameter has been selected, the plant can be inserted into your drawing by:

1 Point,

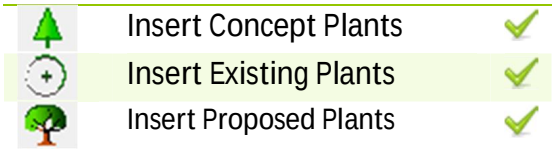
2 Points,

Scale 2 Points or

Region (only for Proposed Plants). These methods are explained below.

## 1 Point Method

Applies to:



Clicking on 1 Point button attaches a figure or image of the plan view of the plant to your crosshair and the plant is inserted in your drawing where you click your left mouse button.

On the example below, the two plants to the left have been already inserted. The highlighted black plant is attached to the cursor and won't be placed until we click the left mouse button.

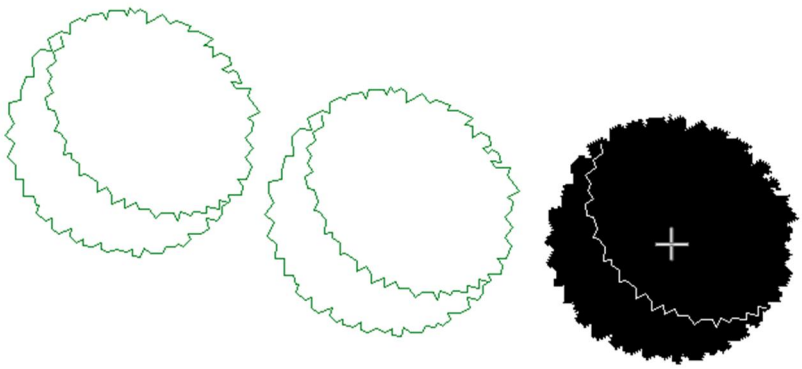


Fig.9 –Example of Proposed Plants inserted by one point

## 2 Points Method

Applies to:

| | |
|---|---|
| Insert Concept Plants | ✓ |
| Insert Existing Plants | ✓ |
| Insert Proposed Plants | ✓ |

Clicking on 2 Points button attaches a figure or image of the plant to your crosshair, but two mouse clicks are required to insert it. The first mouse click positions the plant figure origin (approximate centre); the second click defines the orientation of the plant, i.e., you can spin it around.

On the example below, the two plants to the left have been already inserted. The highlighted black plant is attached to the cursor and won't be placed until we click the left mouse button once. You can rotate the plant as shown below by moving your mouse around.

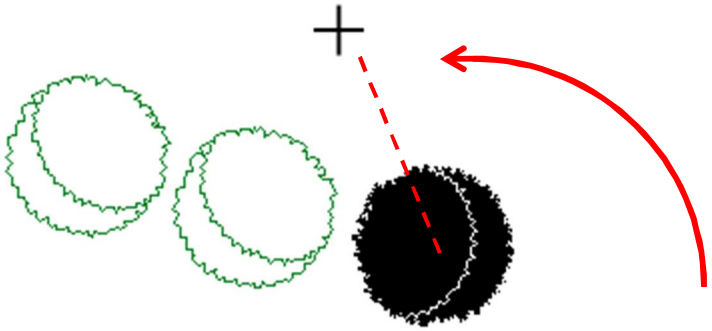


Fig.10 –Proposed Plants being inserted by 2 points

Once we click the second time, the plant will be inserted with our desired orientation. Note that the plant inserted on the right side has different orientation.

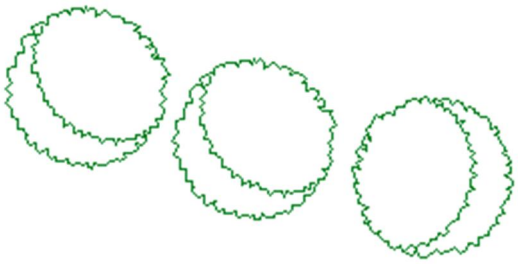


Fig.11 –Proposed Plants inserted by 2 points

## Scale 2 Points Method

Applies to:

| | |
|---|---|
| Insert Concept Plants | ✓ |
| Insert Existing Plants | ✓ |
| Insert Proposed Plants | ✓ |

Clicking on Scale 2 Points button attaches a figure or image of the plant to your crosshair, but two mouse clicks are required to insert it. The first mouse click positions the plant figure; the second click defines the orientation and size, or scale, of the plant, i.e., you can spin it around and you can also make it larger or smaller than the original image.

On the example below, the two plants to the left have been inserted already. The highlighted black plant is attached to the cursor and won't be placed until we click the left mouse button. You can rotate and scale (size) the plant as shown below by moving your mouse around.

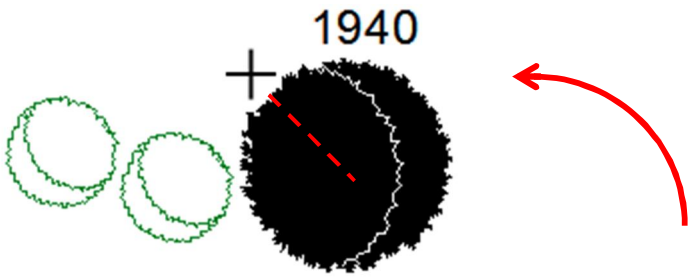



Fig.12 –Proposed Plants being inserted by Scale 2 points

Once we click the second point, the plant will be inserted with our desired diameter and orientation. Note that the plant inserted on the right side has different rotation and size.

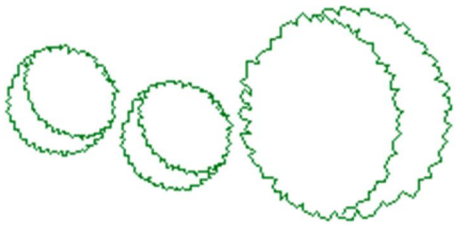


Fig.13 –Proposed Plants inserted by Scale 2 points

## Region (Mass Planting) Method

Applies to:

| | |
|---|---|
| Insert Concept Plants | ✗ |
| Insert Existing Plants | ✗ |
| Insert Proposed Plants | ✓ |

Mass Planting or Planting Regions are possible by using the Insert Region button.

### Note

Note that a plane (hatch) must be inserted prior to using this command. The plane will define the area or region of mass planting.

Having previously inserted a plane, click on Insert Proposed Plant command and select your desired plant. Clicking on the Region will show the following dialog.

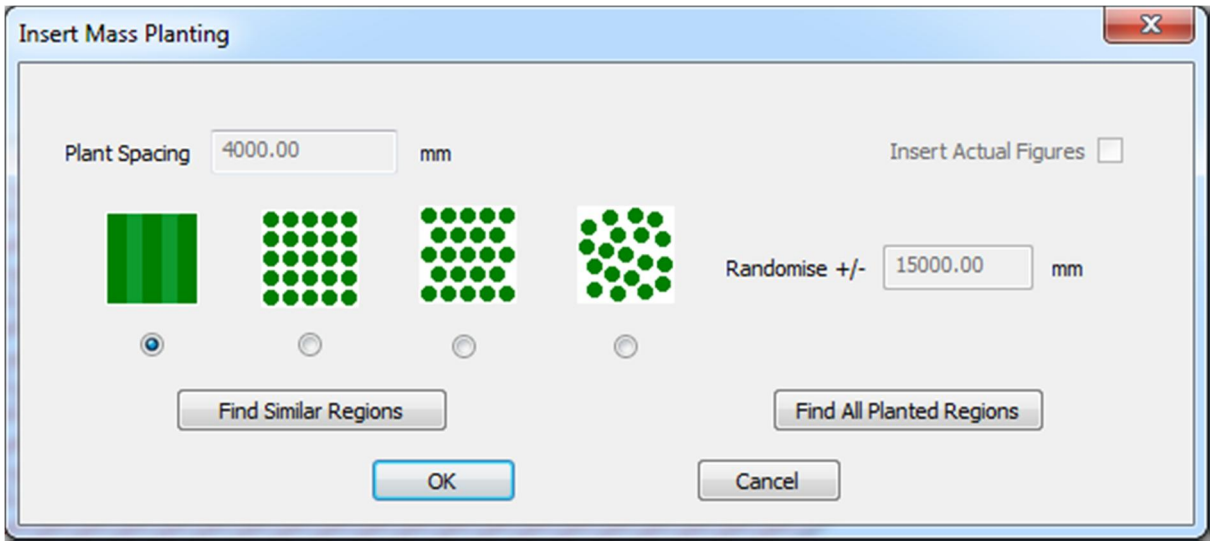



Fig.14 –Insert Mass Planting dialog box after clicking the Region button on Insert Proposed Plants

It is possible to insert mass planting (regions of plants) using any of the following methods:

Ground Cover Planting will apply the mass planting to the specified plane. This command records the planting in terms of area rather than quantity.

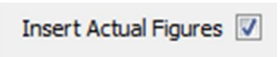
Square Planting will apply plant Figures equally spaced by a specified distance in a regular grid pattern.

Offset Planting will apply plant Figures spaced by a specified distance in a triangular offset pattern.

Random Planting will apply plant Figures approximately spaced by a the distance you specified but with a +/- value that you specify. This gives you a more natural looking method of distributing your plants over an area.

The Randomise value is the maximum variation to the plant spacing you wish to apply when using Random planting.

The Plant spacing value determines the centre to centre spacing between each plant.




When the Insert Actual Figures option is checked, visible plant Figures will be inserted in the drawing for each plant on the plane. If it is NOT checked you will not see the plants in your drawing and instead the chosen plane will only be 'tagged' with the plant information.

You should uncheck this option if your drawing is too complex or 'busy' and a simple plane is all you need to represent your region of plants.

In this example, we have inserted a solid fill plane to apply mass planting to. You may use a pattern fill, hatching or any other plane type.

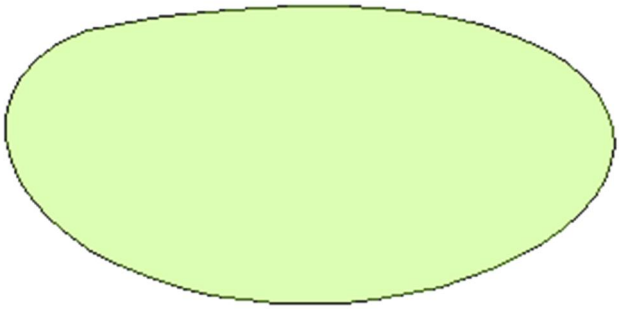


Fig.15 –Filled Plane inserted

Next, follow these easy steps:

1. Select the Insert Proposed Plant command
2. Select your desired plant from the list
3. Click on the Region button

4. Select your desired mass planting method

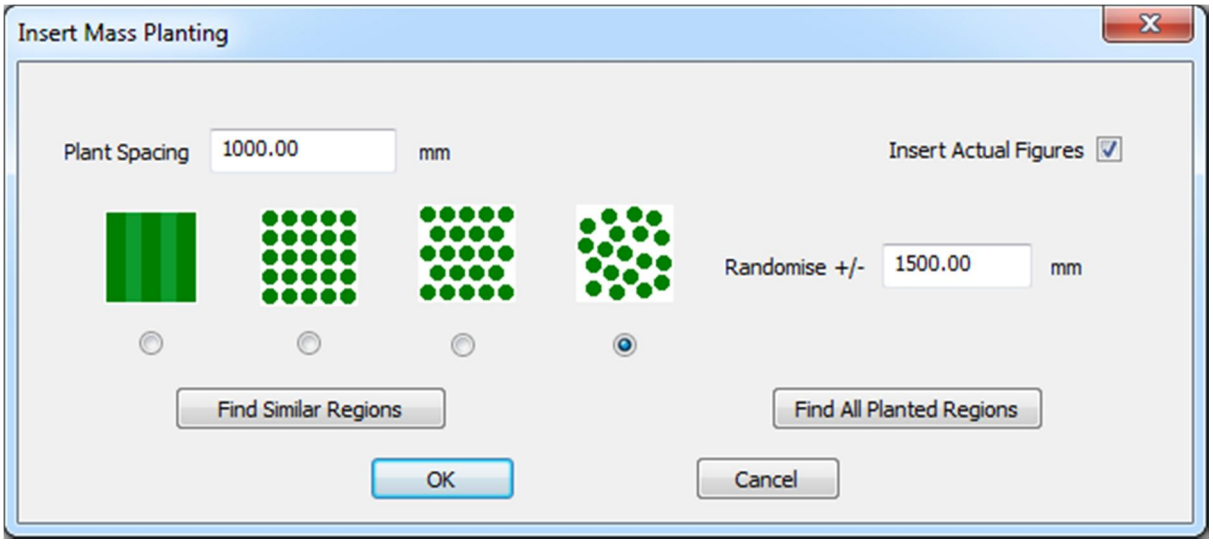



Fig.16 –Select Mass Planting Method

4.1. For Ground Cover Planting, click OK
4.2. For Square and Offset Planting, set the desired plant spacing between the centre points of the figures and then click OK. (Optionally check the Insert Actual Figures option to display the figures within the plane region).
4.3. For Random Planting, enter a Randomise factor value.

5. Select the plane to insert plants

Note that the Show/Hide Actual Plants checkbox is not available on Ground Cover Planting.

Depending on the settings previously selected, we can have different visual results.

a) Insert Actual Figures unchecked
Selecting your desired plane will apply the specified plant as mass planting.

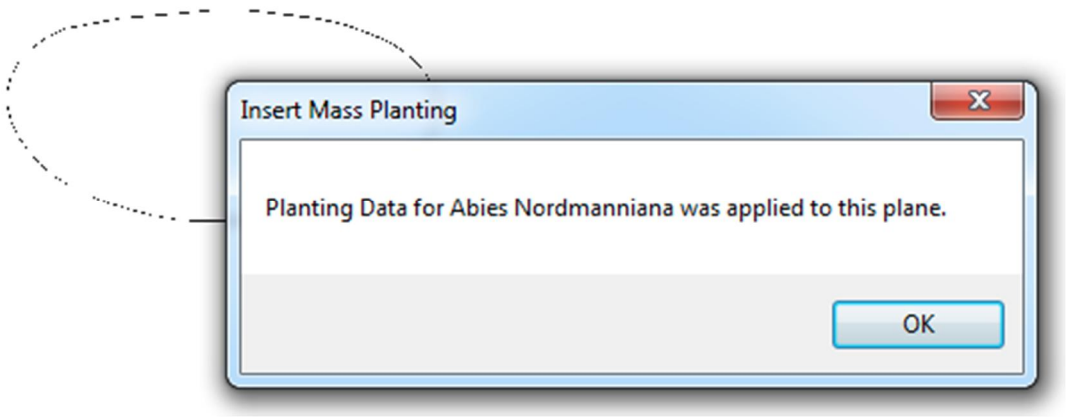



Fig.17–Mass Planting applied to a plane not showing actual figures

However, it won't display any figures in the region unless specified.

b) Insert Actual Figures checked

It will show the plant figures whose insertion point is within the selected plane.

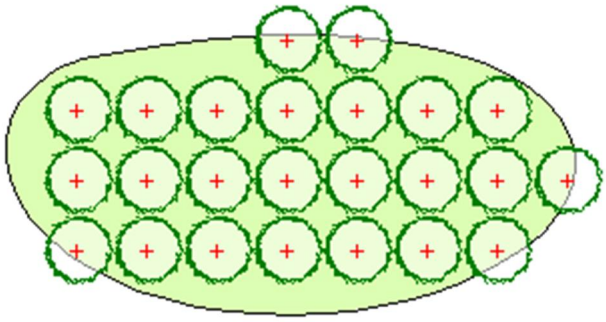


Fig.18 –Square Mass Planting applied to a plane showing actual figures

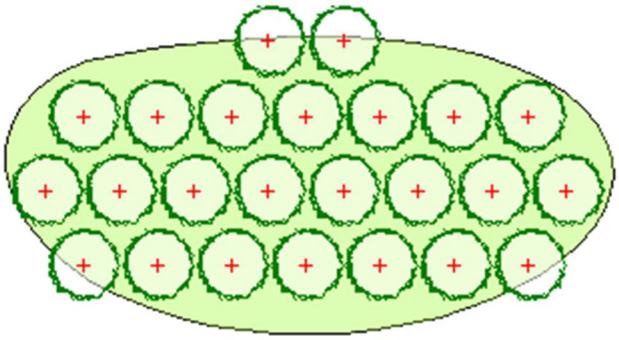


Fig.19 –Offset Mass Planting applied to a plane showing actual figures

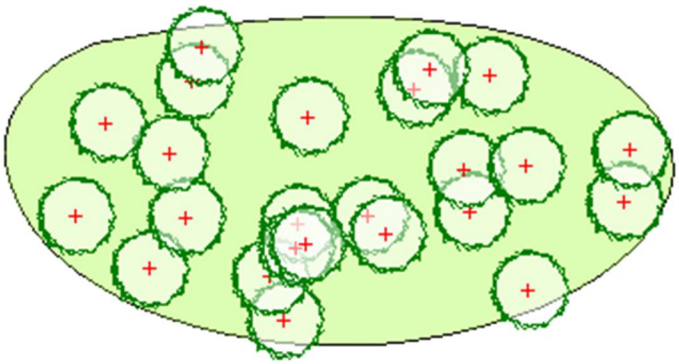


Fig.20 –Random Mass Planting applied to a plane showing actual figures

## Note

The Randomise option will produce a different result each time it is used. Once plants have been inserted they can still be moved or modified as desired

## Tip

Displaying all plant figures on large Planes may dramatically affect the software performance on slower machines. For larger areas don't show the actual figures until printing/plotting.

To verify that the mass planting has been applied to the plane, double click on the plane. A dialog box will appear with useful information such as Planting and Hatching data.

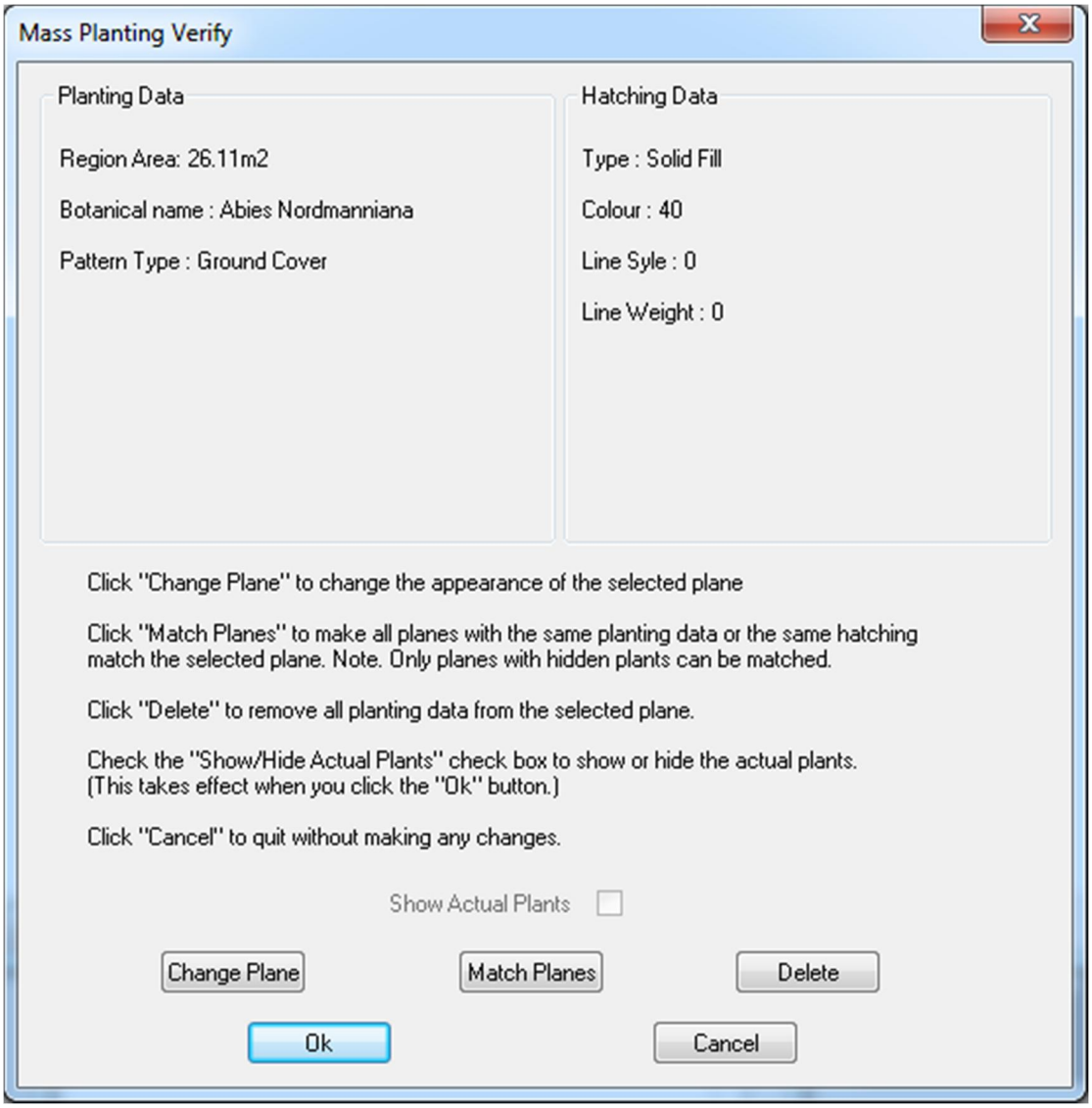

Mass Planting Verify
Planting Data
Region Area: 26.11m2
Botanical name : Abies Nordmanniana
Pattern Type : Ground Cover
Hatching Data
Type : Solid Fill
Colour : 40
Line Syle : 0
Line Weight : 0
Click "Change Plane" to change the appearance of the selected plane
Click "Match Planes" to make all planes with the same planting data or the same hatching match the selected plane. Note. Only planes with hidden plants can be matched.
Click "Delete" to remove all planting data from the selected plane.
Check the "Show/Hide Actual Plants" check box to show or hide the actual plants. (This takes effect when you click the "Ok" button.)
Click "Cancel" to quit without making any changes.
Show Actual Plants
Change Plane
Match Planes
Delete
Ok
Cancel

Fig.21 –Mass Planting Properties dialog box

The Hatching Data display will show different information depending on the type of plane used.

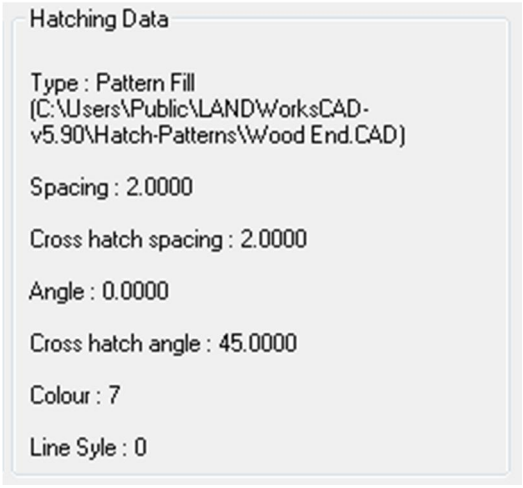



Fig.22 –Hatching data for Pattern Fill

You may:

a) Change the plane appearance by clicking on the Change Plane button,
b) Match Planes to make all planes with the same planting data or the same hatching match selected planes.
c) Delete the planting data from the selected plane.
d) Show actual plants on planes with plant data attached. (not for Ground Cover Planting)

## Note

If a plant has not been selected before any of these buttons are clicked, the following dialog box will be displayed, indicating that a plant must be selected from the "Selected Items" list.

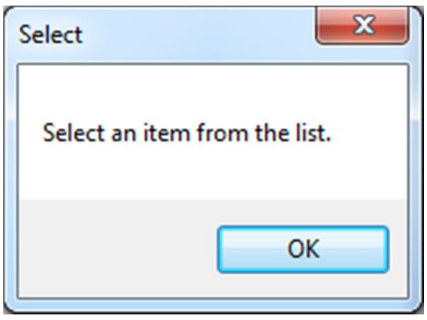
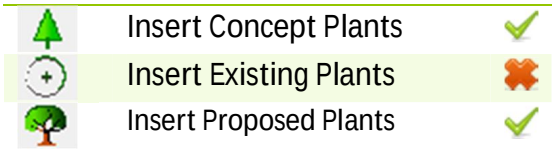



Fig.23 –Dialog box when no plant has been selected prior to insertion

## Tip

If you want to insert more copies of a plant that you have already inserted you don't have to repeat this command. Simply copy the plants in the usual way. They will still be recognised for labelling and schedules.

## Searching Plants




The method for searching plants has been redesigned completely and simplified for ease of use in v6.

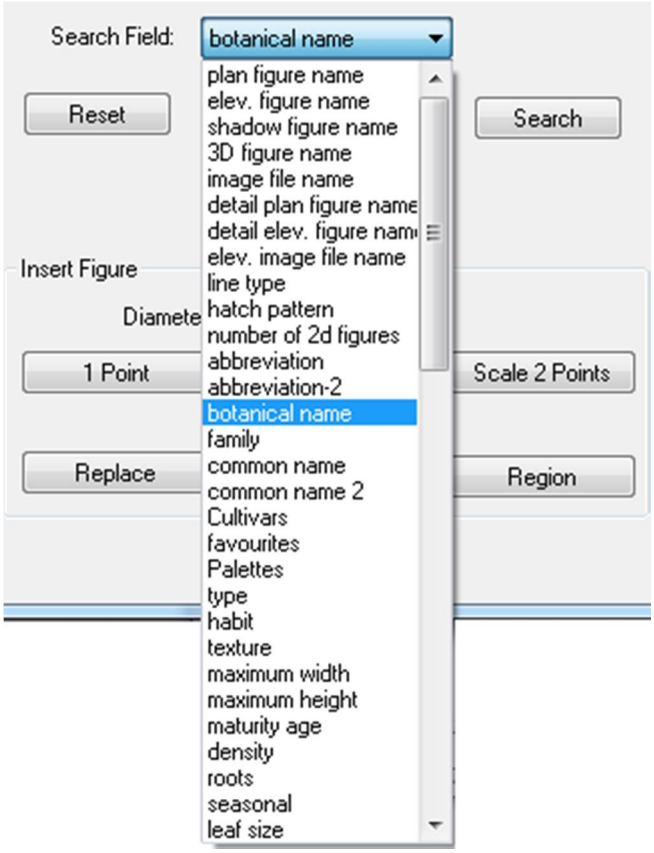



Fig.24 –Search Field selector from Insert Proposed Plants

Select your desired field (column) available and start typing the Botanical Name, for instance.

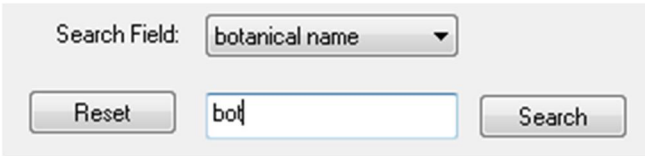



Fig.25 –Typing a botanical name in the search box

The plant list will filter automatically showing all matches for your typed text string.

In this example, ‘bot’ will return:

- bothriochloa Macra
- eriobotrya Japonica
- Eucalyptus Botryoides

These 3 plants contain ‘bot’ as a part of their botanical names.

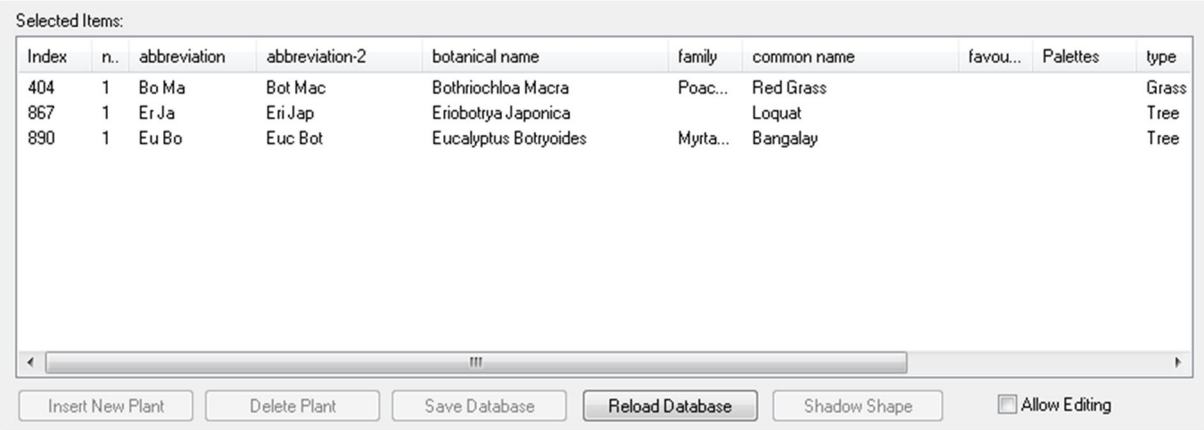



Fig.26 –Proposed Plants filtered list by searching ‘bot’

Clicking the Reset button will display the entire plant list.

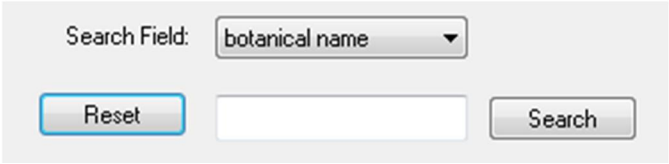
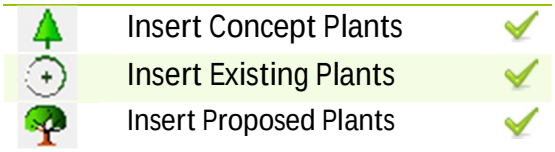



Fig.27 –Clicking the Reset button will populate the entire plant list

## Note

Concept Plants and Proposed Plants contain different plant information columns to those of proposed plants.

## Replacing Plants



The Replace button lets you replace plants that have already been inserted into the drawing with other plants from the database.

This can be done in either of two ways:

1. You can select the plants to be replaced first and then run the command, or
2. You can run the command first and then select the plants to be replaced

The two methods are nearly identical. The main difference is in how you can select the plants to be replaced.

In both examples, we will replace Proposed Plants. The steps below can also be done for Concept and Existing plants.

### Select the plants to be replaced and then run the command

Step 1 – Select the plants that have already been inserted into the drawing. You can use any selection technique for this.

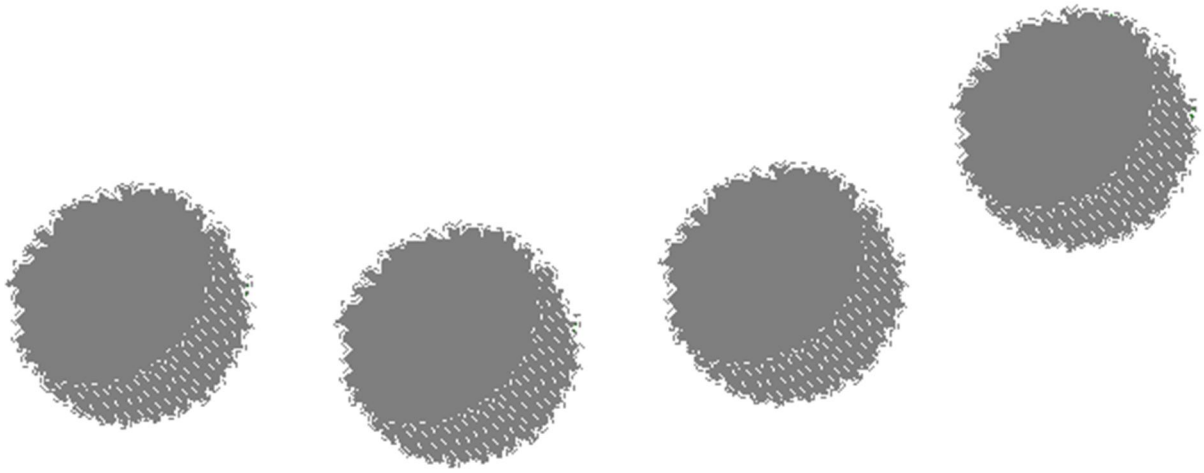


Fig.28 –Previously selected Proposed Plants

Step 2 – Choose the Insert Proposed Plant command.

Step 3 – Select the desired replacement plant from the “Selected Items” list.

Step 4 – Click the “Replace” button.

The selected plants will be replaced.

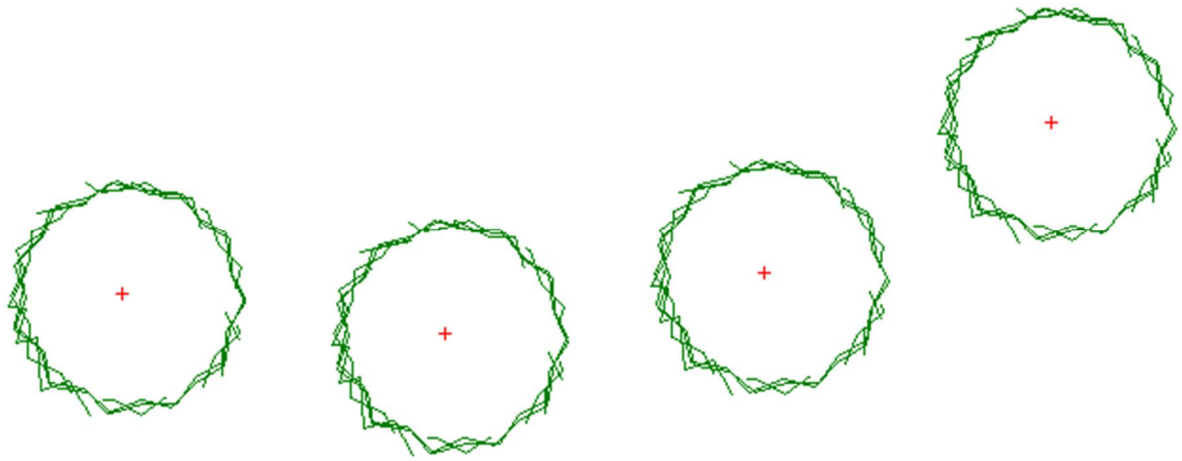


Fig.29 –Proposed Plants replaced

## Run the command first and then select the plants to be replaced

Step 1 – Run the Insert Concept Plant command.

Step 2 – Select the replacement plant from the “Selected Items” list.

Step 3 – Click the “Replace” button.

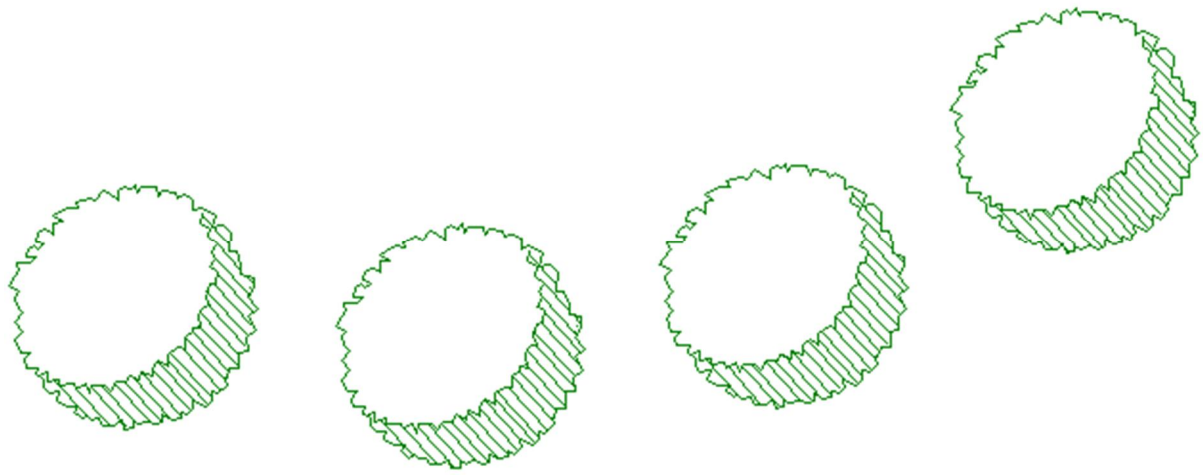


Fig.30 –Proposed Plants not previously selected

Step 4 – Select the plants that have already been inserted into the drawing. You can only select plants one at a time using this method.

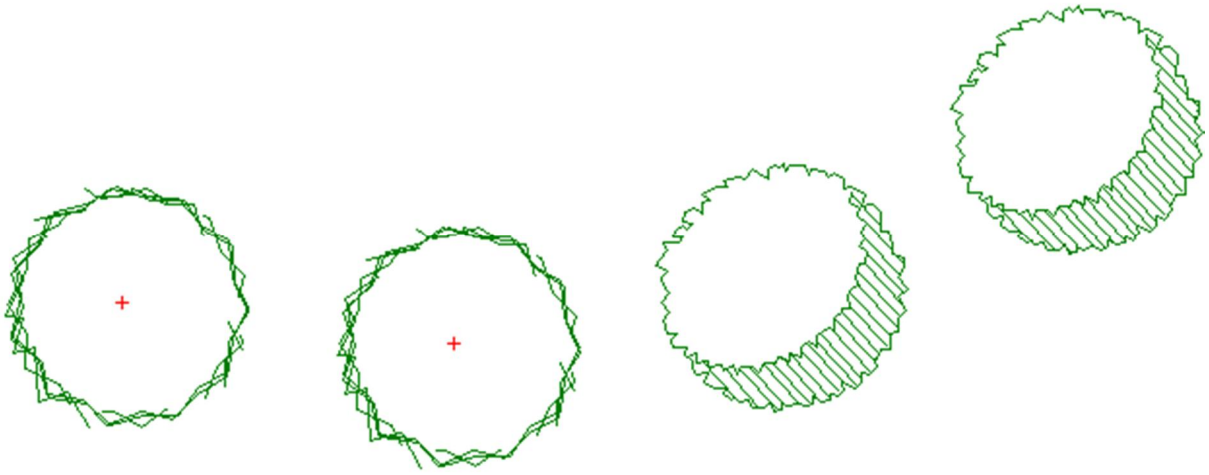
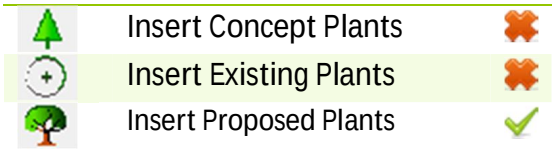


Fig.31 –Replaced Proposed Plants clicked one by one

The selected plants will be replaced by the new plant.

## Plant Palettes




LANDWorksCAD v.6 introduces a smarter way to work with plants.

Plant Palettes are designed to filter and create your own groups of plants from the vast plant database. This will speed up your plant selection and allow you to set up logical groups of plants for different types of design work.

You don't have to use palettes to use LANDWorksCAD, however you will find plant selection much easier and more logical. Typical palettes may be based on a job you have done in the past that you found was successful or perhaps simply a range of plants that a particular area is best suited to growing. It could even be a list of plants from a particular supplier.

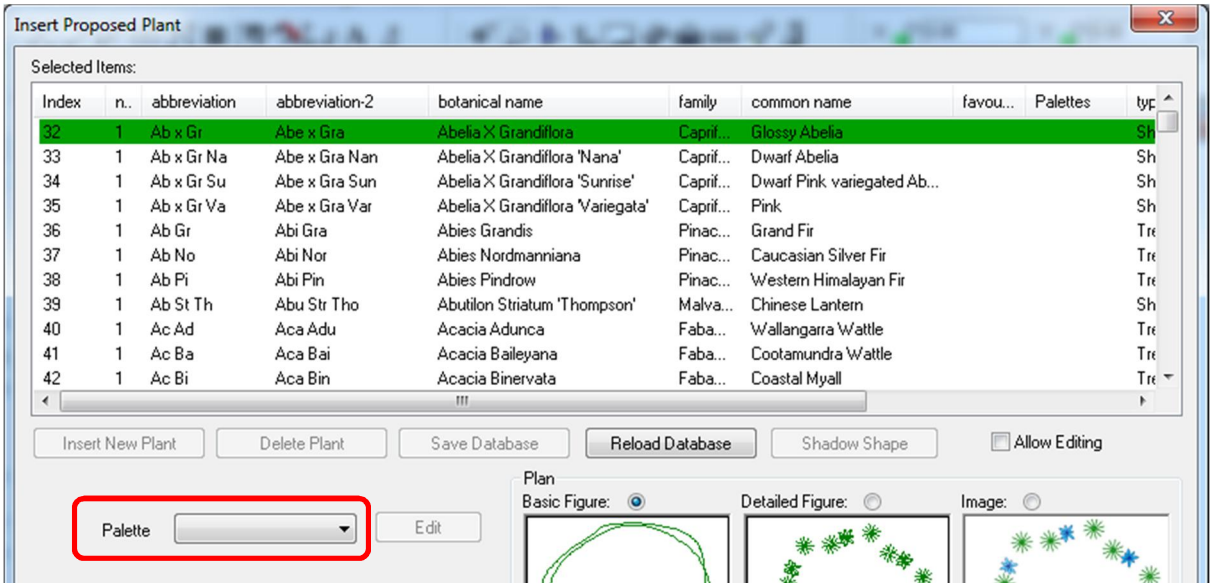

Insert Proposed Plant
Selected Items:
Index n.. abbreviation abbreviation-2 botanical name family common name favou... Palettes typ
32 1 Ab x Gr Abe x Gra Abelia X Grandiflora Caprif... Glossy Abelia Sh
33 1 Ab x Gr Na Abe x Gra Nan Abelia X Grandiflora 'Nana' Caprif... Dwarf Abelia Sh
34 1 Ab x Gr Su Abe x Gra Sun Abelia X Grandiflora 'Sunrise' Caprif... Dwarf Pink variegated Ab... Sh
35 1 Ab x Gr Va Abe x Gra Var Abelia X Grandiflora 'Variegata' Caprif... Pink Sh
36 1 Ab Gr Abi Gra Abies Grandis Pinac... Grand Fir Tre
37 1 Ab No Abi Nor Abies Nordmanniana Pinac... Caucasian Silver Fir Tre
38 1 Ab Pi Abi Pin Abies Pindrow Pinac... Western Himalayan Fir Tre
39 1 Ab St Th Abu Str Tho Abutilon Striatum 'Thompson' Malva... Chinese Lantern Sh
40 1 Ac Ad Aca Adu Acacia Adunca Faba... Wallangarra Wattle Tre
41 1 Ac Ba Aca Bai Acacia Baileyana Faba... Cootamundra Wattle Tre
42 1 Ac Bi Aca Bin Acacia Binervata Faba... Coastal Myall Tre
Insert New Plant
Delete Plant
Save Database
Reload Database
Shadow Shape
Allow Editing
Palette
Edit
Plan
Basic Figure:
Detailed Figure:
Image:

Fig.32 –Non-filtered Proposed Plant List

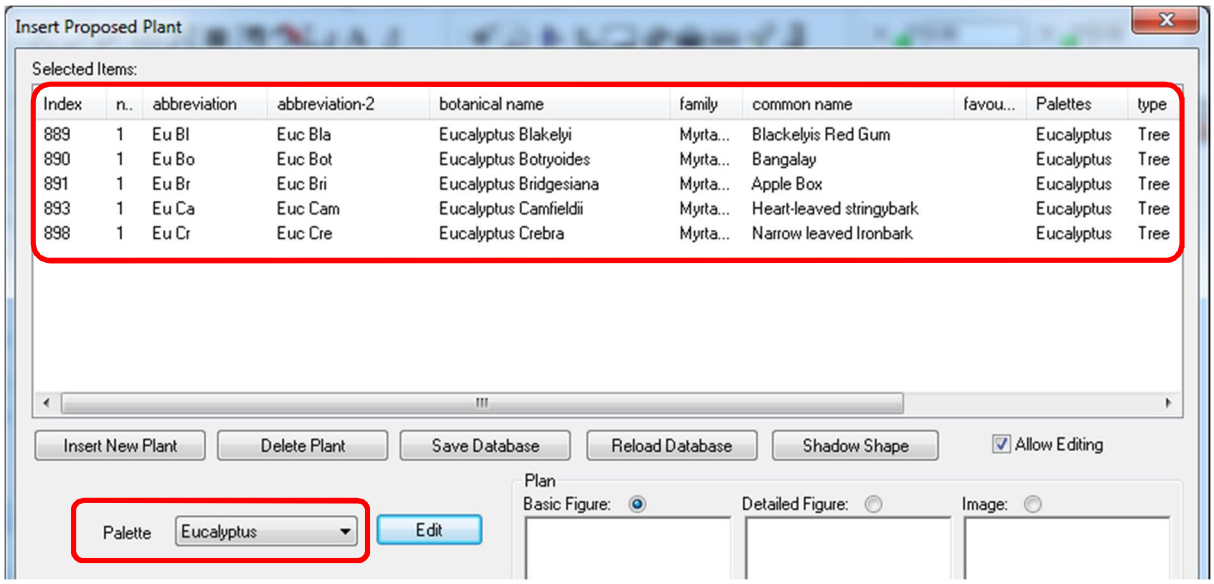

Insert Proposed Plant
Selected Items:
Index n.. abbreviation abbreviation-2 botanical name family common name favou... Palettes type
889 1 Eu Bl Euc Bla Eucalyptus Blakelyi Myrta... Blackelyis Red Gum Eucalyptus Tree
890 1 Eu Bo Euc Bot Eucalyptus Botryoides Myrta... Bangalay Eucalyptus Tree
891 1 Eu Br Euc Bri Eucalyptus Bridgesiana Myrta... Apple Box Eucalyptus Tree
893 1 Eu Ca Euc Cam Eucalyptus Camfieldii Myrta... Heart-leaved stringybark Eucalyptus Tree
898 1 Eu Cr Euc Cre Eucalyptus Crebra Myrta... Narrow leaved Ironbark Eucalyptus Tree
Insert New Plant
Delete Plant
Save Database
Reload Database
Shadow Shape
Allow Editing
Plan
Basic Figure:
Detailed Figure:
Image:
Palette
Eucalyptus
Edit

Fig.33 –Filtering the Proposed Plant List by 'Eucalyptus' Palette

## Managing the Plant Palettes

To create, modify or delete your Plant Palettes, we must edit the plant database, so check the 'Allow editing' checkbox to activate the Palette Edit button.

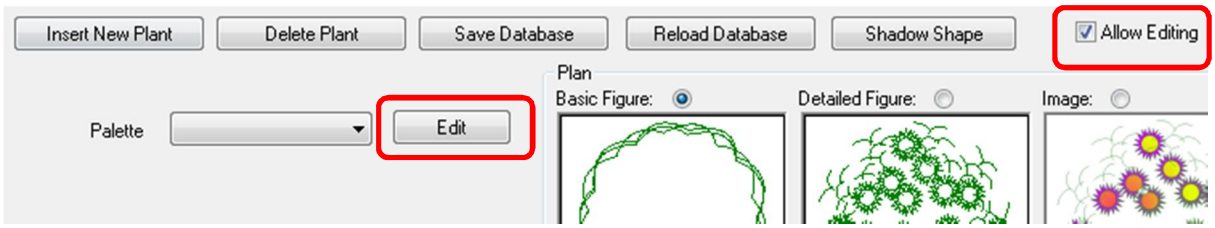



Fig.34 –Enabling the Edit button on the Palette section is done by checking the 'Allow Editing' option

Clicking on the Edit button will open the Plant Palettes dialog box.

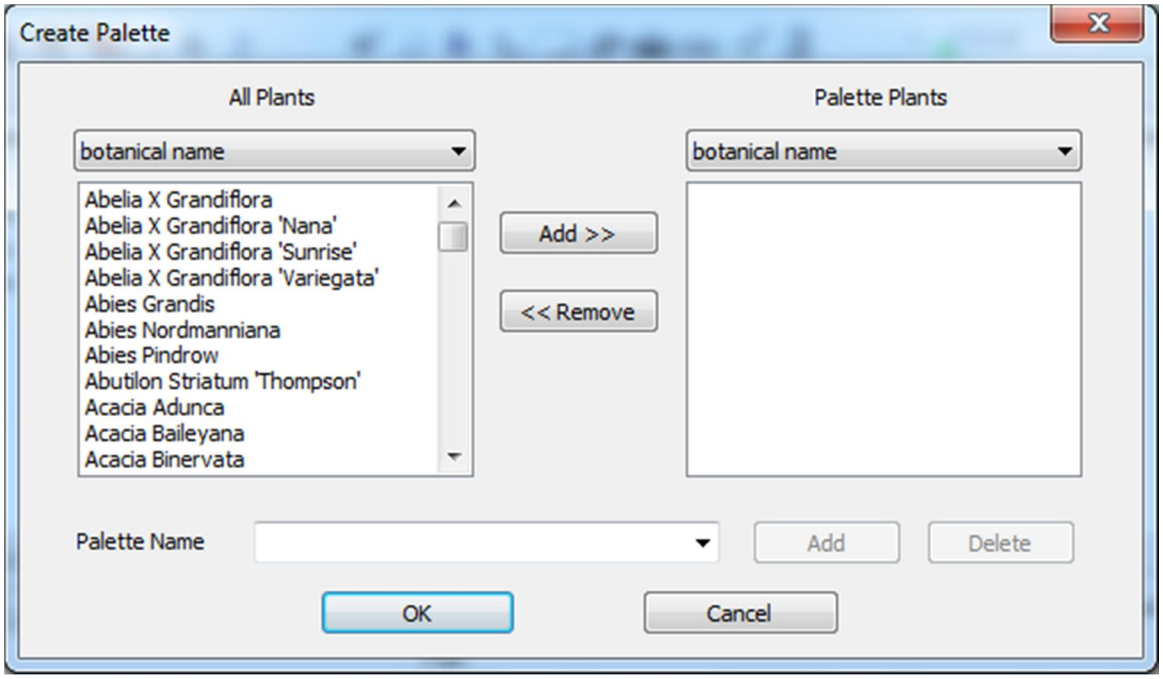



Fig.35 –This dialog box allows managing the Plant Palettes

## Note

The plant list is showing the botanical names of the plants by default. You may change the information displayed by selecting the appropriate information field from the dropdown list, for instance, abbreviation

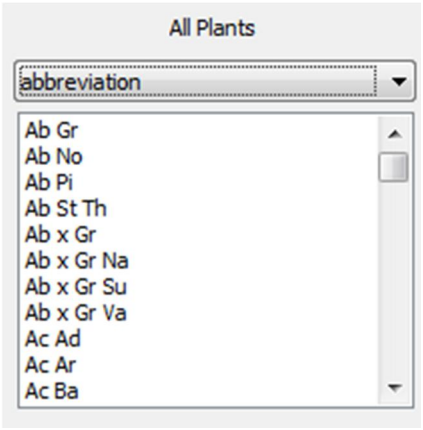



Fig.36 –Displaying plant list by Abbreviation

## Create a new Plant Palette

In the following example, we will create a Plant Palette for a landscape design. We will select the plants to be used for that specific design. First, select the plant to add to the plant palette.

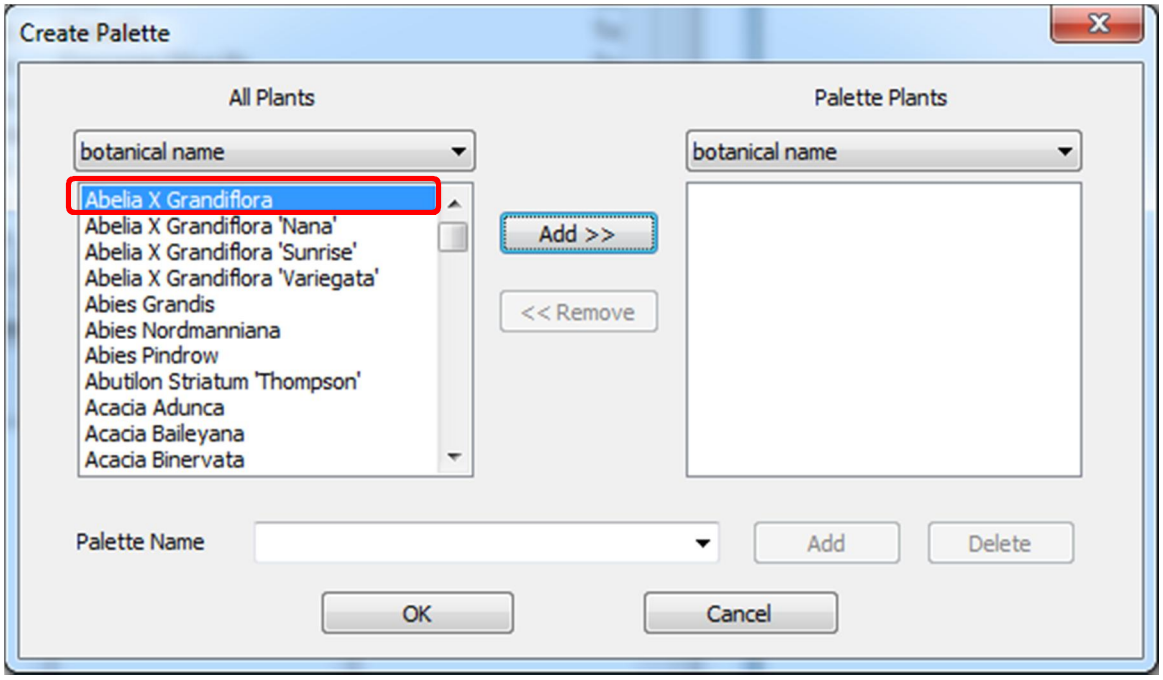



Fig.37 –Selecting your desired plant will highlight it showing a blue background

Then, click on Add >>

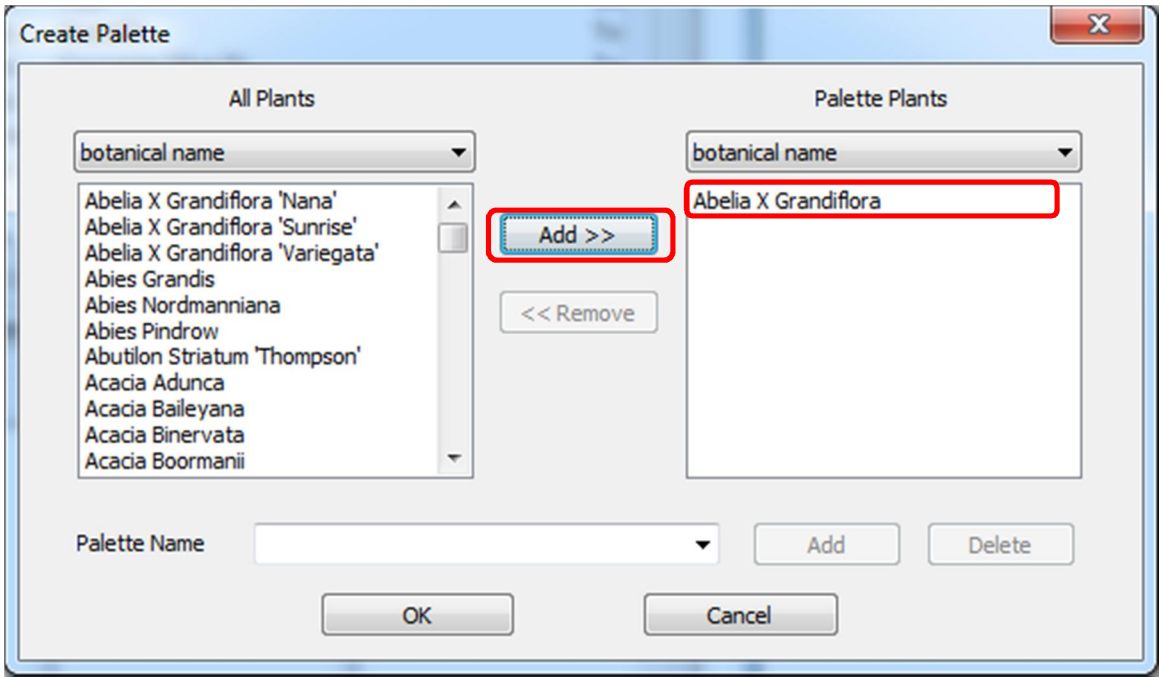



Fig.38 –Clicking on Add >> will add the plant to the Plant Palette

The plant will be added to the Palette list on the right.

We can repeat the process for each plant

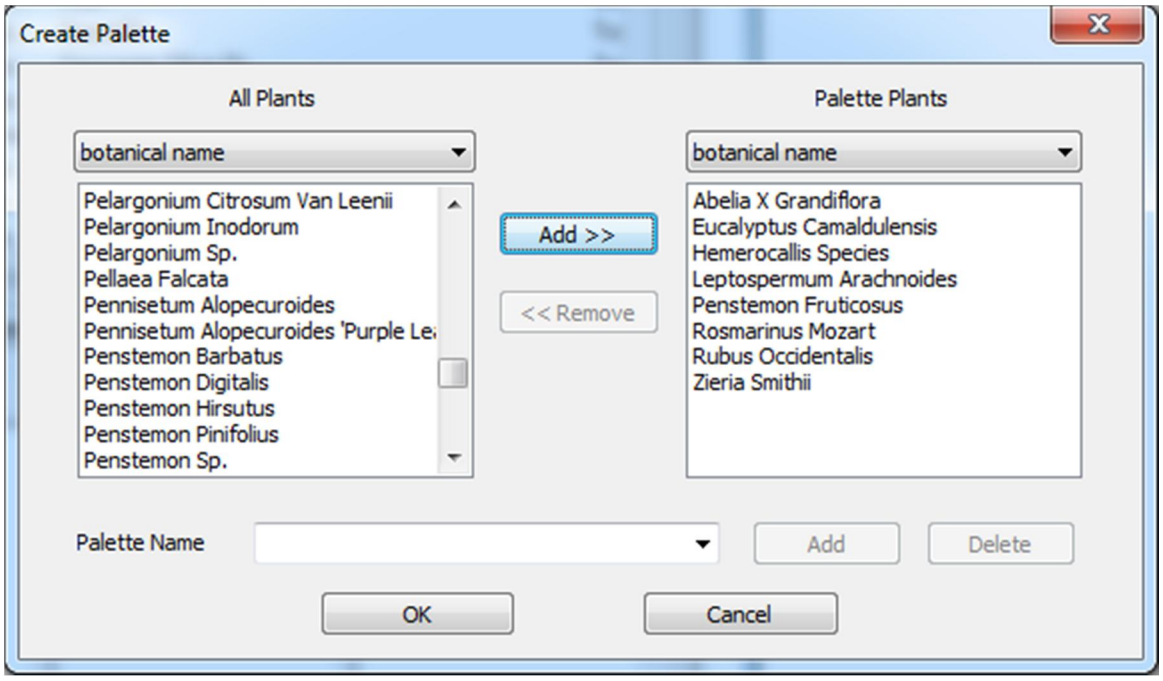



Fig.39 –Several Plants added to the Palette

Once you are happy with the plant selection, type the Palette Name for that list of plants and click on the Add button on the right side of the Palette Name list.

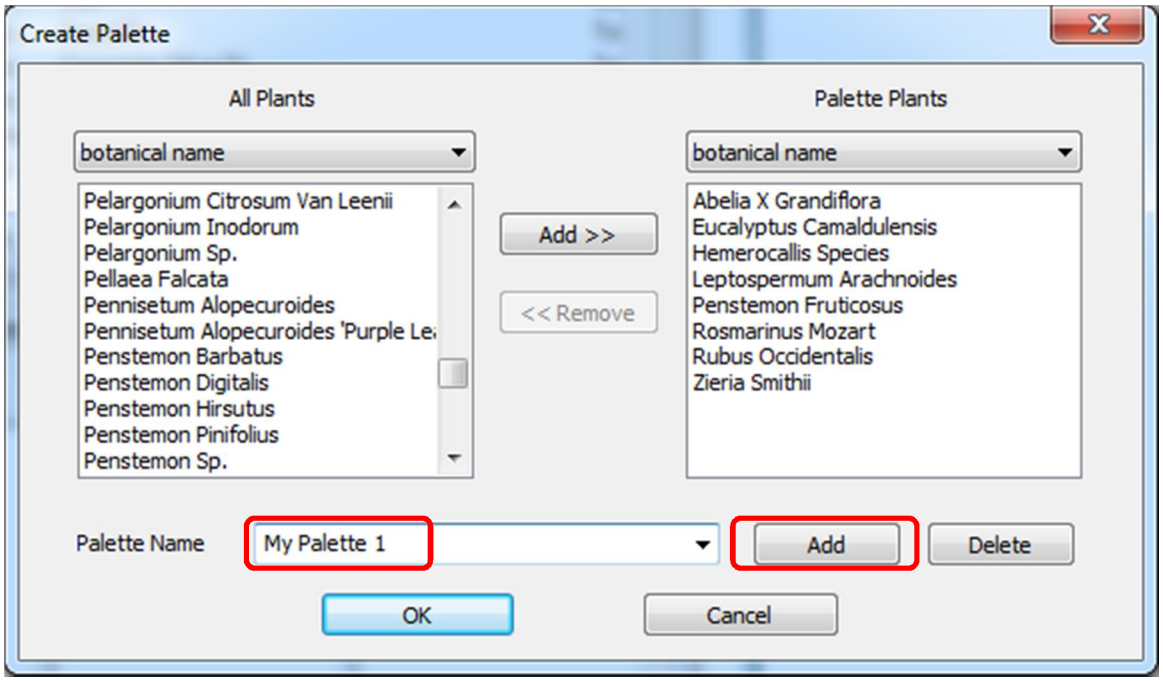



Fig.40 –Type your desired Palette Name then click on Add

Note that the Add button will be greyed out once the Plant Palette is added.

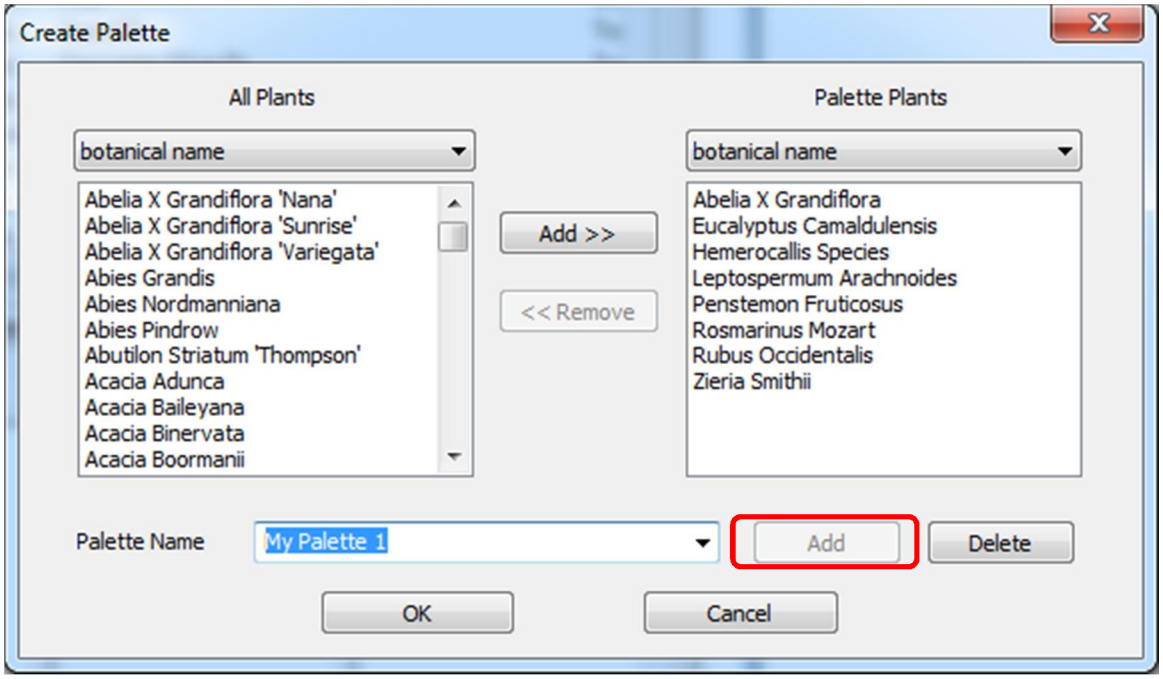



Fig.41 –Plant Palette already added

To create another Plant Palette or manage the rest of the Plant Palettes, click on the Palette Name dropdown list and select the empty one.

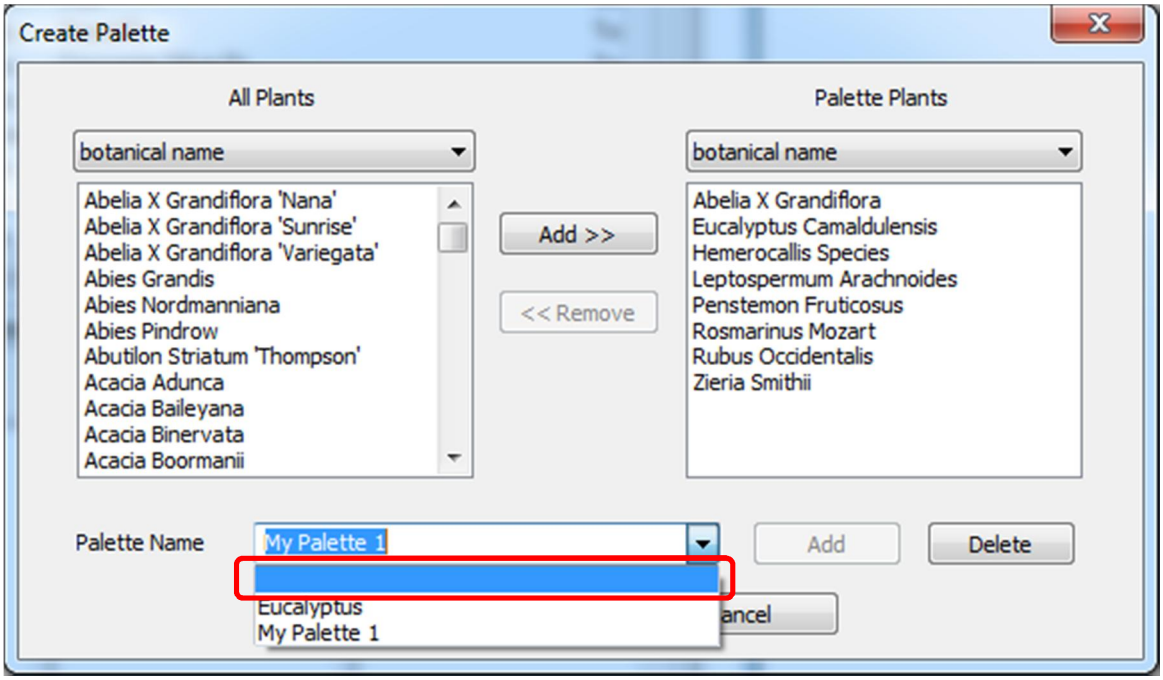



Fig.42 – Selecting the blank Palette Name in order to start over and create a new Plant Palette

That will clear the Palette Plants list so we can start adding plants to a new one.

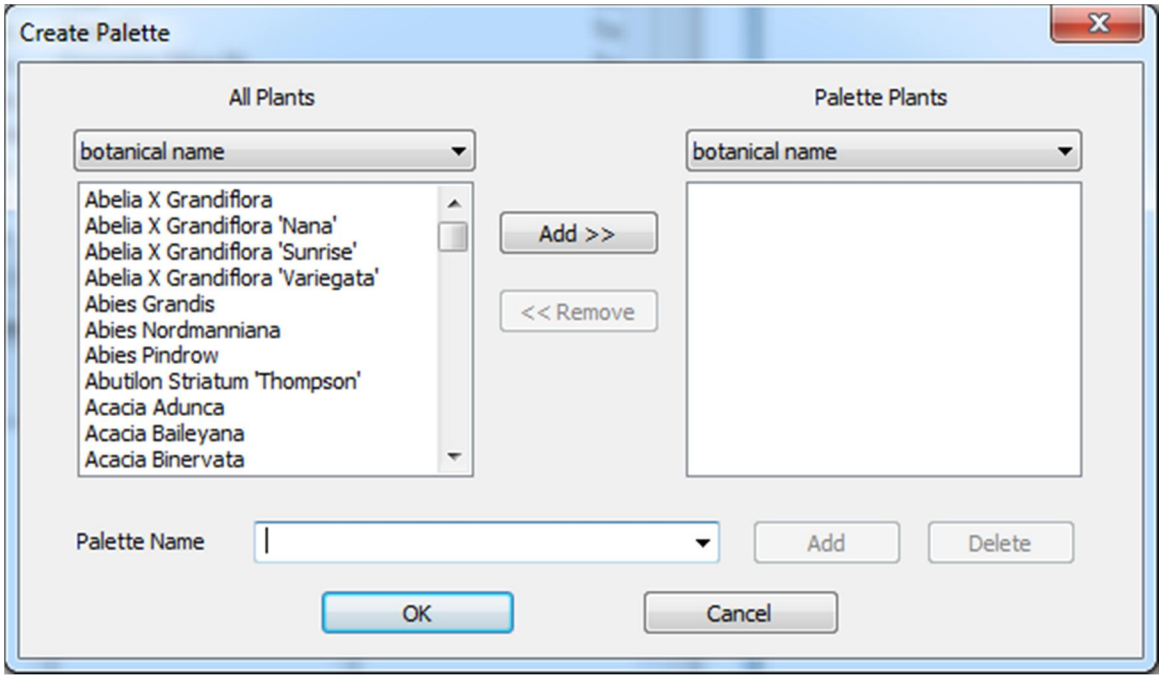



Fig.43 – Ready to create or manage the Plant Palettes

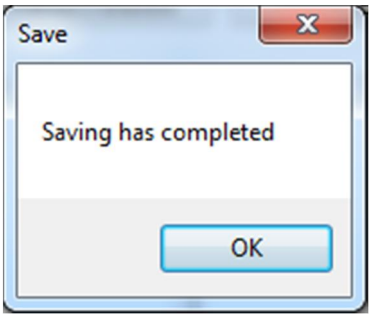
Once we finish creating our Plant Palettes, click OK to go back to the Insert Proposed Plant list.

## Tip

You can make multiple selections from the All Plants side of the dialog and add them to the Palette by using the Ctrl key on your keyboard and selecting more than one plant or by double-clicking on the desired plant to select it immediately.

## Important Note

Remember to use Save Database for the Palettes to be saved to your Excel file.




Figs.44 and 45 – Saving the Plant Database

Once it completes, uncheck the Allow Editing checkbox to avoid making unwanted changes to the plant database.

Fig.46 – Disabling Editing the Plant Database

When the Palette selected is blank, all the plants in your Excel file will be listed.

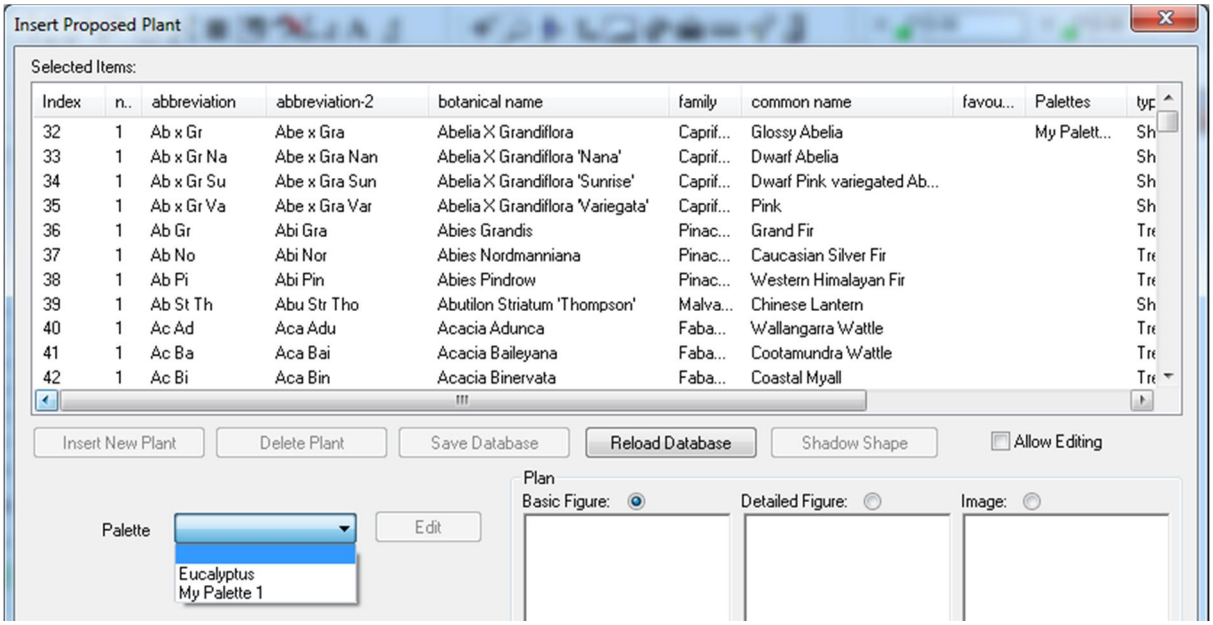

Insert Proposed Plant
Selected Items:
Index n.. abbreviation abbreviation-2 botanical name family common name favou... Palettes typ
32 1 Ab x Gr Abe x Gra Abelia X Grandiflora Caprif... Glossy Abelia My Palett... Sh
33 1 Ab x Gr Na Abe x Gra Nan Abelia X Grandiflora 'Nana' Caprif... Dwarf Abelia Sh
34 1 Ab x Gr Su Abe x Gra Sun Abelia X Grandiflora 'Sunrise' Caprif... Dwarf Pink variegated Ab... Sh
35 1 Ab x Gr Va Abe x Gra Var Abelia X Grandiflora 'Variegata' Caprif... Pink Sh
36 1 Ab Gr Abi Gra Abies Grandis Pinac... Grand Fir Tre
37 1 Ab No Abi Nor Abies Nordmanniana Pinac... Caucasian Silver Fir Tre
38 1 Ab Pi Abi Pin Abies Pindrow Pinac... Western Himalayan Fir Tre
39 1 Ab St Th Abu Str Tho Abutilon Striatum 'Thompson' Malva... Chinese Lantern Sh
40 1 Ac Ad Aca Adu Acacia Adunca Faba... Wallangarra Wattle Tre
41 1 Ac Ba Aca Bai Acacia Baileyana Faba... Cootamundra Wattle Tre
42 1 Ac Bi Aca Bin Acacia Binervata Faba... Coastal Myall Tre
Insert New Plant
Delete Plant
Save Database
Reload Database
Shadow Shape
Allow Editing
Plan
Basic Figure:
Detailed Figure:
Image:
Palette
Edit
Eucalyptus
My Palette 1

Fig.47 – Listing all Proposed Plants from the database

Selecting any of the Plant Palettes available will only display the plants previously chosen when creating the Plant Palette.

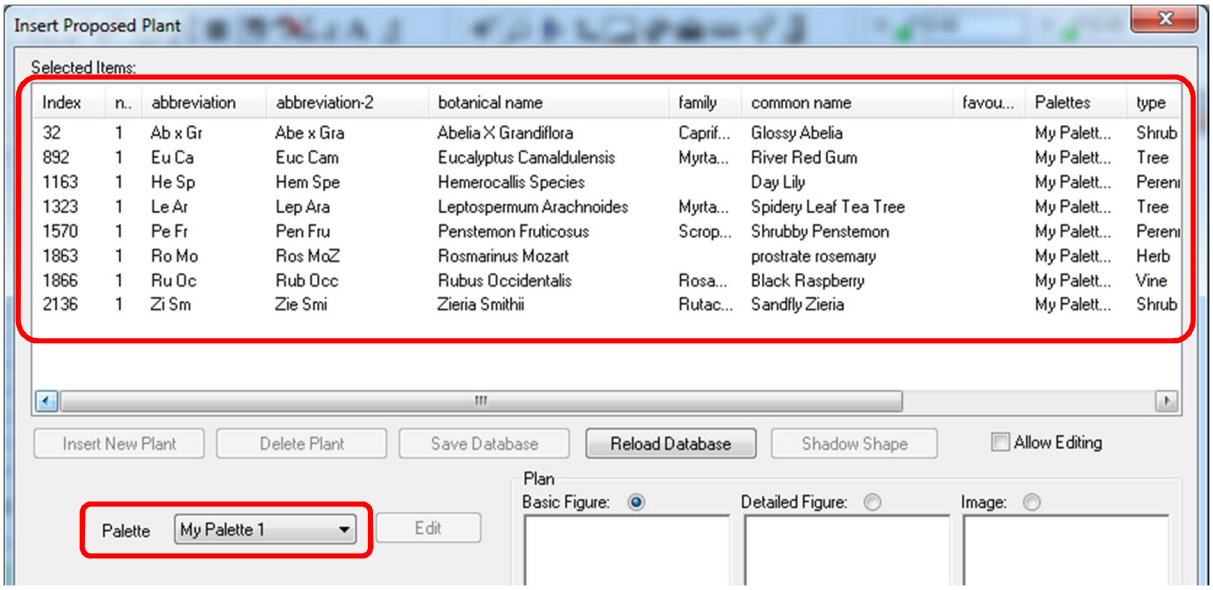

Insert Proposed Plant
Selected Items:
Index n.. abbreviation abbreviation-2 botanical name family common name favou... Palettes type
32 1 Ab x Gr Abe x Gra Abelia X Grandiflora Caprif... Glossy Abelia My Palett... Shrub
892 1 Eu Ca Euc Cam Eucalyptus Camaldulensis Myrta... River Red Gum My Palett... Tree
1163 1 He Sp Hem Spe Hemerocallis Species Day Lily My Palett... Perenn
1323 1 Le Ar Lep Ara Leptospermum Arachnoides Myrta... Spidery Leaf Tea Tree My Palett... Tree
1570 1 Pe Fr Pen Fru Penstemon Fruticosus Scrop... Shrubby Penstemon My Palett... Perenn
1863 1 Ro Mo Ros MoZ Rosmarinus Mozart prostrate rosemary My Palett... Herb
1866 1 Ru Oc Rub Occ Rubus Occidentalis Rosa... Black Raspberry My Palett... Vine
2136 1 Zi Sm Zie Smi Zieria Smithii Rutac... Sandfly Zieria My Palett... Shrub
Insert New Plant
Delete Plant
Save Database
Reload Database
Shadow Shape
Allow Editing
Plan
Basic Figure:
Detailed Figure:
Image:
Palette
My Palette 1
Edit

Fig.48 – My Palette 1 Proposed Plant list filtered

## Edit an existing Plant Palette

First, make sure you check the Allow Editing checkbox as explained on the Managing the Plant Palettes section.

On the Palette Name dropdown list, select the list you wish to modify. In this example, we will make changes to the My Palette 1 Plant Palette.

Selecting the Palette will display the Palette Plants on the right list.

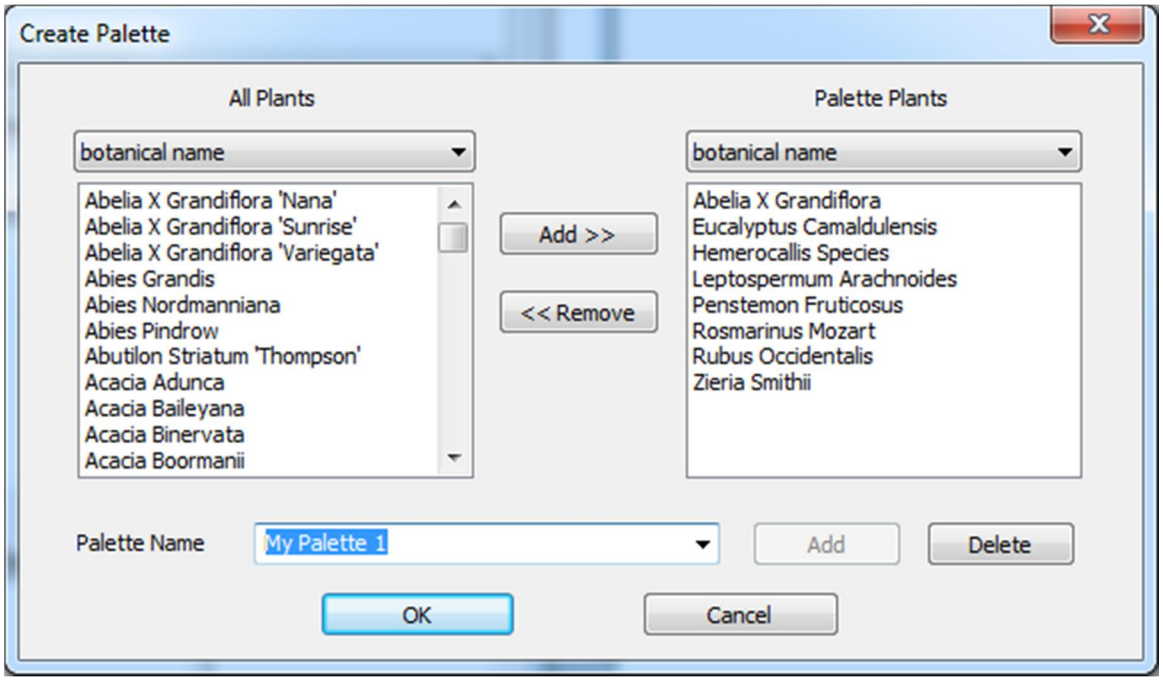



Fig. 49 – My Palette 1 Proposed Plant list filtered

- Adding Plants – select the plant you wish to add on the list to the left, then click on Add >> button.
- Removing Plants – select the plant you wish to delete on the list to the right, then click on << Remove button.

On the list below, we have made some changes:

- Adding:
  - Abelia X Grandiflora ‘Nana’
  - Abelia X Grandiflora ‘Sunrise’
- Removing:
  - Eucalyptus Camaldulensis
  - Zieria Smithii

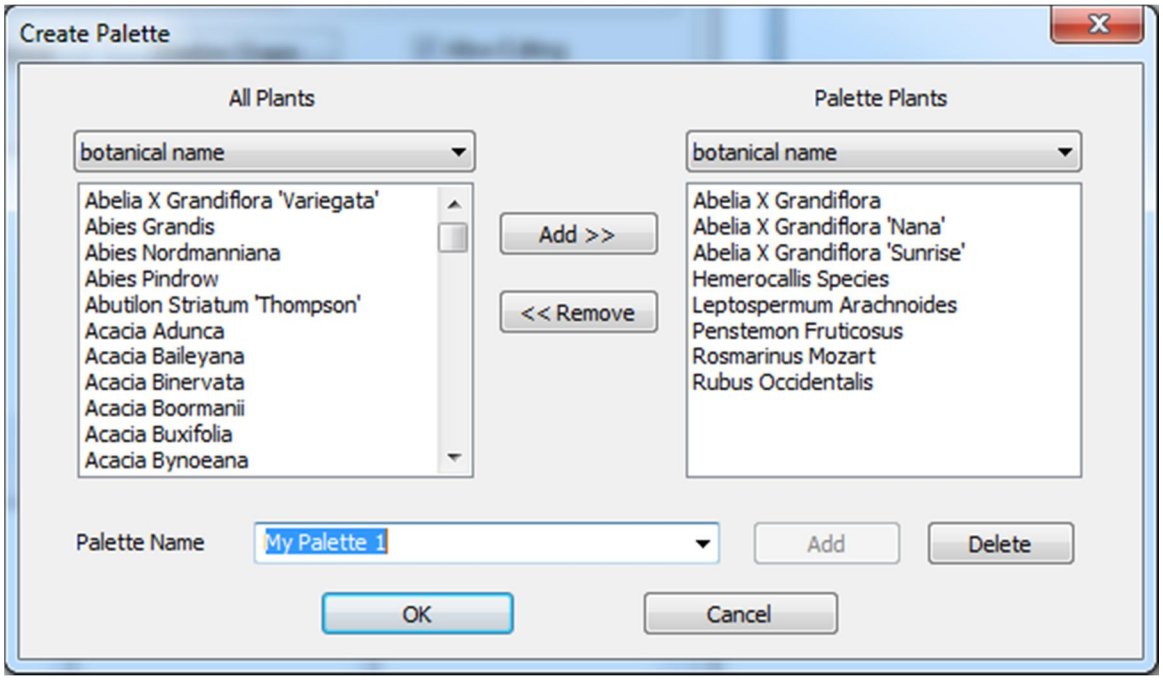



Fig. 50 – My Palette 1 Edited

Once you are happy with the changes click OK.

## Important Note

Remember to Save Database for the Palettes to be saved to your Excel file.

Once it completes, uncheck the Allow Editing checkbox to avoid making unwanted changes to the plant database.

## Delete a Plant Palette

First, make sure you check the Allow Editing checkbox as explained on the Managing the Plant Palettes section.

On the Palette Name dropdown list, select the list you wish to delete. In this example, we will delete the Eucalyptus Plant Palette.

Selecting the Palette will display the Palette Plants on the right list.

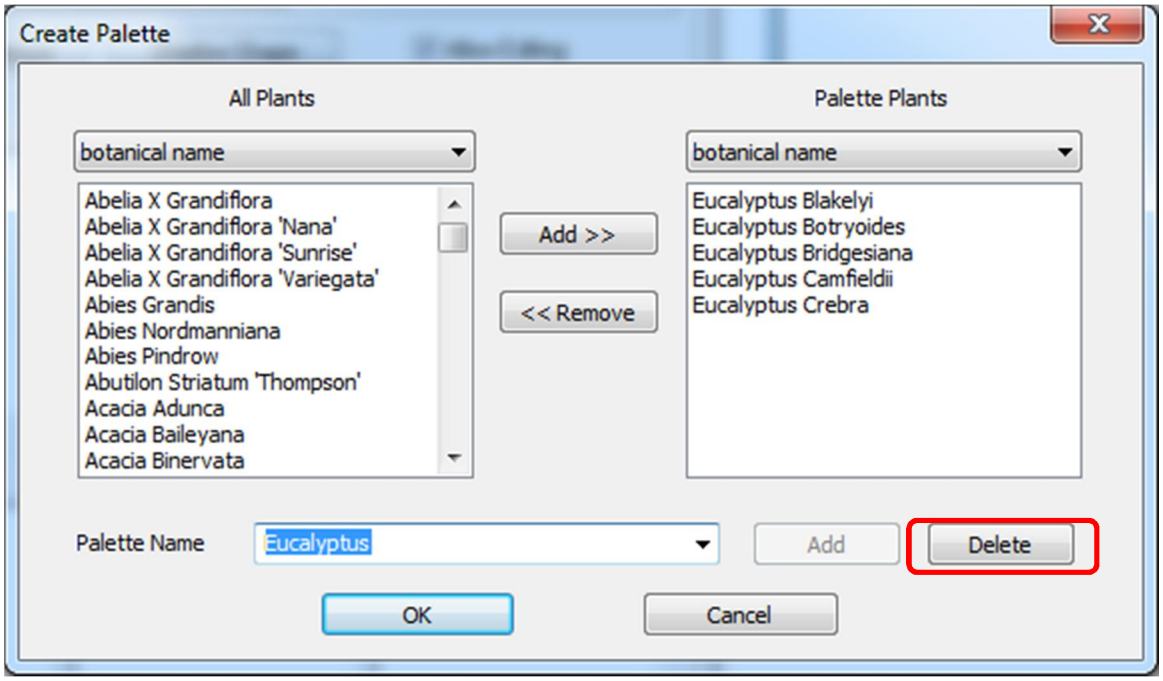



Fig. 51 – Eucalyptus Proposed Plant list filtered

Then click on Delete.

Click on Yes on the confirmation dialog box.

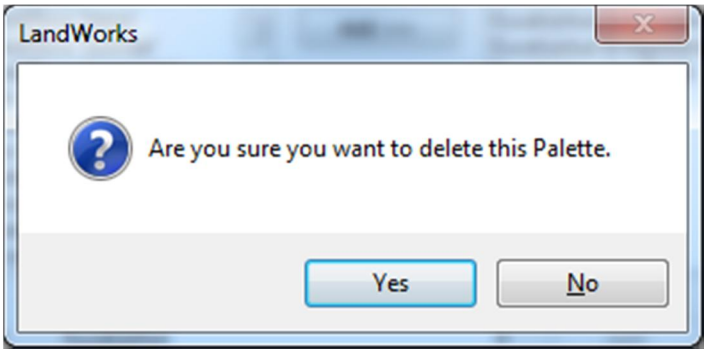



Fig. 52 – Plant Palette Delete confirmation dialog box

The Plant Palette will be deleted and no longer will appear on the Palette Name list.

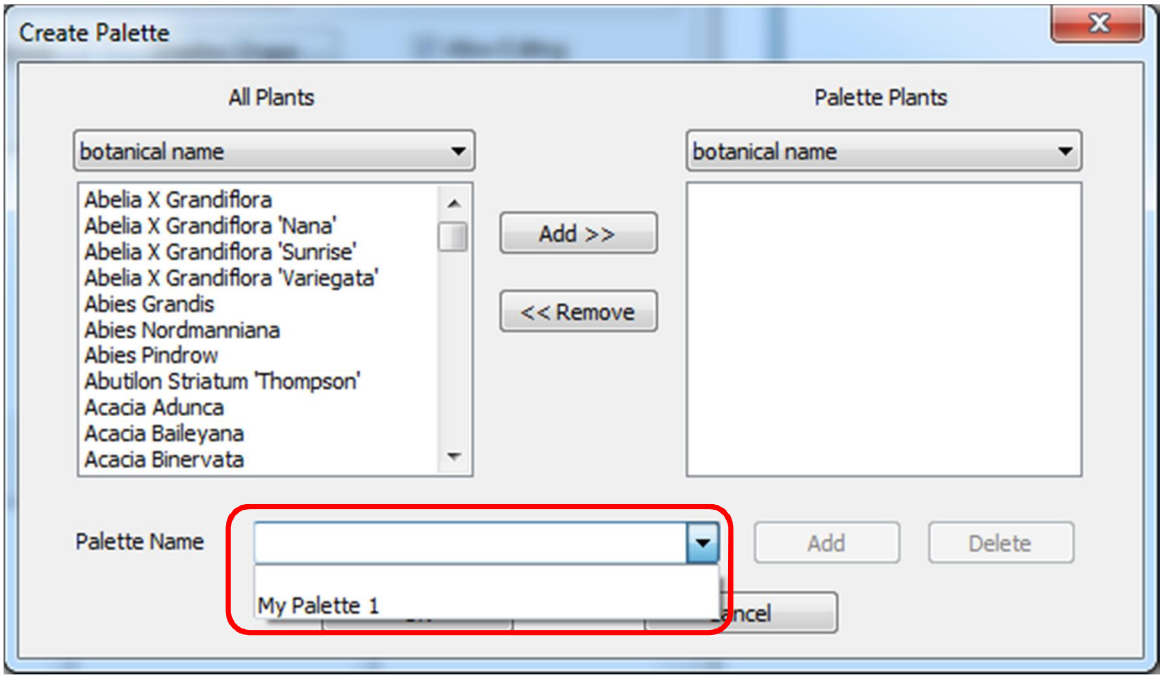



Fig. 53 – Plant Palette Delete confirmation dialog box

Once you are happy with the changes click OK.

## Important Note

Remember to save the plant database for the Palettes to be saved.

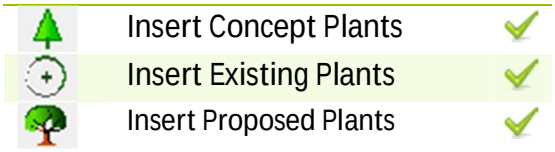
Click on the Save Database button to save the changes to the Excel Plant database.

Once it completes, uncheck the Allow Editing checkbox to avoid making unwanted changes to the plant database.

## Notes

- The same plants can be added to different Plant Palettes
- For each landscape design, it is suggested to create at least one Plant Palette to speed up the Proposed Plant insertion process and to build up your palettes for future use on similar jobs.

## Edit the Plant Database from LANDWorksCAD




Editing the Plant Database from LANDWorksCAD is done in a similar way for Concept, Existing and Proposed Plants.

In this example we will edit the Proposed Plants database.

The buttons and tick box displayed just below the "Selected Items" area let you edit your plant database from within LANDWorksCAD. This means you don't actually have to know anything about Microsoft Excel to be able to edit your database. ☺

However, your plant database can also be edited directly in Microsoft Excel if you so choose. Refer to Appendix 2 – Editing the Plant Database in Excel for details.

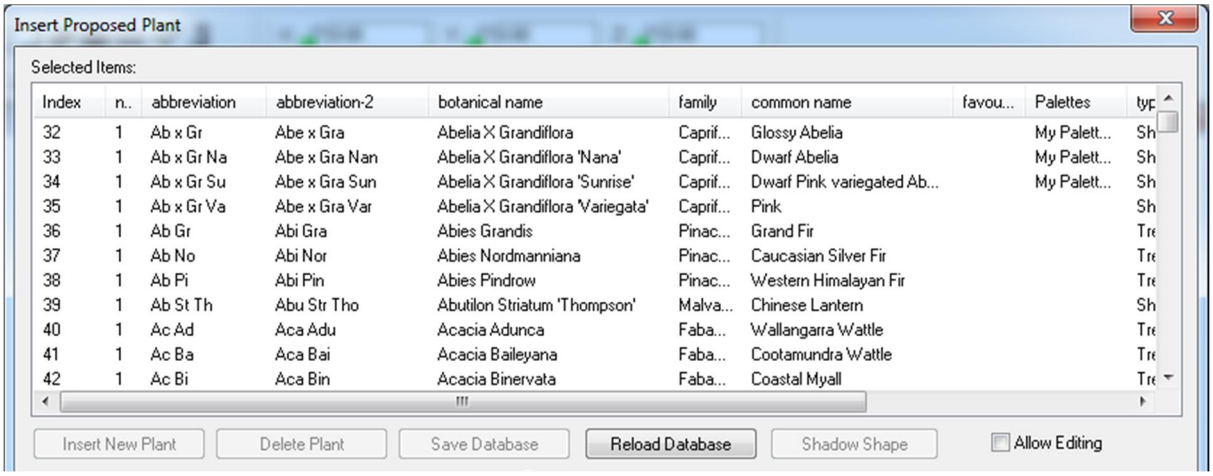

Insert Proposed Plant
Selected Items:
Index | n.. | abbreviation | abbreviation-2 | botanical name | family | common name | favou... | Palettes | typ
32 | 1 | Ab x Gr | Abe x Gra | Abelia X Grandiflora | Caprif... | Glossy Abelia | | My Palett... | Sh
33 | 1 | Ab x Gr Na | Abe x Gra Nan | Abelia X Grandiflora 'Nana' | Caprif... | Dwarf Abelia | | My Palett... | Sh
34 | 1 | Ab x Gr Su | Abe x Gra Sun | Abelia X Grandiflora 'Sunrise' | Caprif... | Dwarf Pink variegated Ab... | | My Palett... | Sh
35 | 1 | Ab x Gr Va | Abe x Gra Var | Abelia X Grandiflora 'Variegata' | Caprif... | Pink | | | Sh
36 | 1 | Ab Gr | Abi Gra | Abies Grandis | Pinac... | Grand Fir | | | Tre
37 | 1 | Ab No | Abi Nor | Abies Nordmanniana | Pinac... | Caucasian Silver Fir | | | Tre
38 | 1 | Ab Pi | Abi Pin | Abies Pindrow | Pinac... | Western Himalayan Fir | | | Tre
39 | 1 | Ab St Th | Abu Str Tho | Abutilon Striatum 'Thompson' | Malva... | Chinese Lantern | | | Sh
40 | 1 | Ac Ad | Aca Adu | Acacia Adunca | Faba... | Wallangarra Wattle | | | Tre
41 | 1 | Ac Ba | Aca Bai | Acacia Baileyana | Faba... | Cootamundra Wattle | | | Tre
42 | 1 | Ac Bi | Aca Bin | Acacia Binervata | Faba... | Coastal Myall | | | Tre
Insert New Plant
Delete Plant
Save Database
Reload Database
Shadow Shape
Allow Editing

Fig. 54 – Proposed Plant List

When the dialog box is displayed, the buttons giving you access to the plant database – Insert New Plant, Delete Plant, Save Database and Shadow Shape – are "greyed-out", i.e., they are not accessible. This is to avoid plant data being accidentally edited. The Reload Database button is available in case the database has been edited in Excel while LANDWorksCAD is open.

## Important Note

You can edit the database in Excel while LANDWorksCAD is running, but you cannot and must not edit the database from within LANDWorksCAD while the database is open in Excel.

This is not a limitation of LANDWorksCAD; it is a simply how files work in computers – you cannot work on the same file, at the same time, with two different programs. If the database is open in Excel when you save it from LANDWorksCAD, you will get an error message and LANDWorksCAD may close.

To activate the greyed-out buttons and allow editing of your plant database, click the Allow Editing box, so that a tick is visible. The buttons will then look like this:

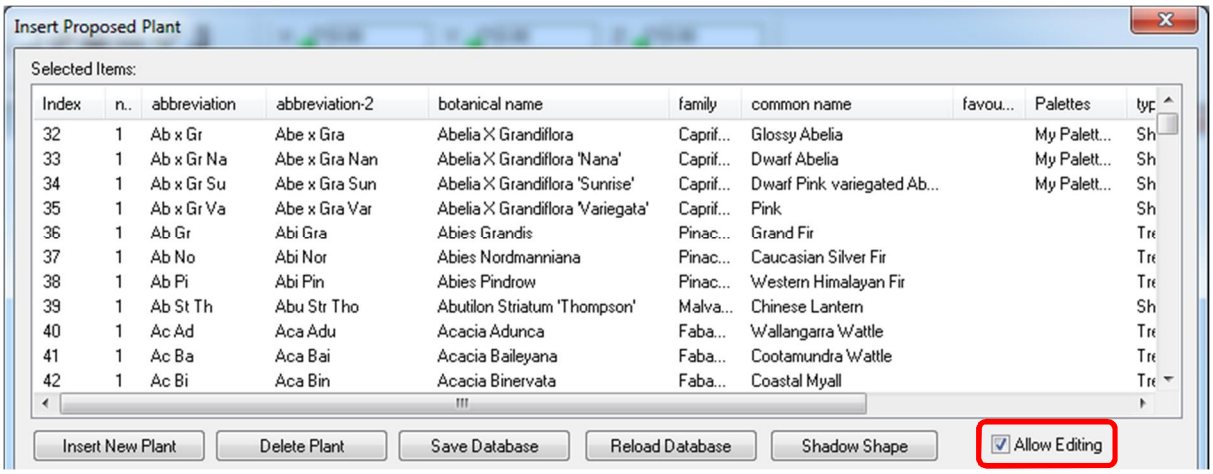

Insert Proposed Plant
Selected Items:
Index n.. abbreviation abbreviation-2 botanical name family common name favou... Palettes typ
32 1 Ab x Gr Abe x Gra Abelia X Grandiflora Caprif... Glossy Abelia My Palett... Sh
33 1 Ab x Gr Na Abe x Gra Nan Abelia X Grandiflora 'Nana' Caprif... Dwarf Abelia My Palett... Sh
34 1 Ab x Gr Su Abe x Gra Sun Abelia X Grandiflora 'Sunrise' Caprif... Dwarf Pink variegated Ab... My Palett... Sh
35 1 Ab x Gr Va Abe x Gra Var Abelia X Grandiflora 'Variegata' Caprif... Pink Sh
36 1 Ab Gr Abi Gra Abies Grandis Pinac... Grand Fir Tr
37 1 Ab No Abi Nor Abies Nordmanniana Pinac... Caucasian Silver Fir Tr
38 1 Ab Pi Abi Pin Abies Pindrow Pinac... Western Himalayan Fir Tr
39 1 Ab St Th Abu Str Tho Abutilon Striatum 'Thompson' Malva... Chinese Lantern Sh
40 1 Ac Ad Aca Adu Acacia Adunca Faba... Wallangarra Wattle Tr
41 1 Ac Ba Aca Bai Acacia Baileyana Faba... Cootamundra Wattle Tr
42 1 Ac Bi Aca Bin Acacia Binervata Faba... Coastal Myall Tr
Insert New Plant
Delete Plant
Save Database
Reload Database
Shadow Shape
Allow Editing

Fig. 55 – Allow Editing the Proposed Plant List

Editing the Plant Database will allow you to Edit, Add or Delete Concept, Existing or Proposed Plants depending on the selected command: Insert Concept Plant, Insert Existing Plant or Insert Proposed Plant.

## Editing Plants from the List

To edit the data of a proposed plant already in the database simply click on the text and edit it. The row of data will be highlighted in green, except for the specific text to be edited, which will remain white for ease of typing.

You can also press the [Tab] key to move to the next column.

Some columns provide a list of data to choose from, indicated by a downward pointing triangle. Clicking on the triangle displays the list, as shown below:

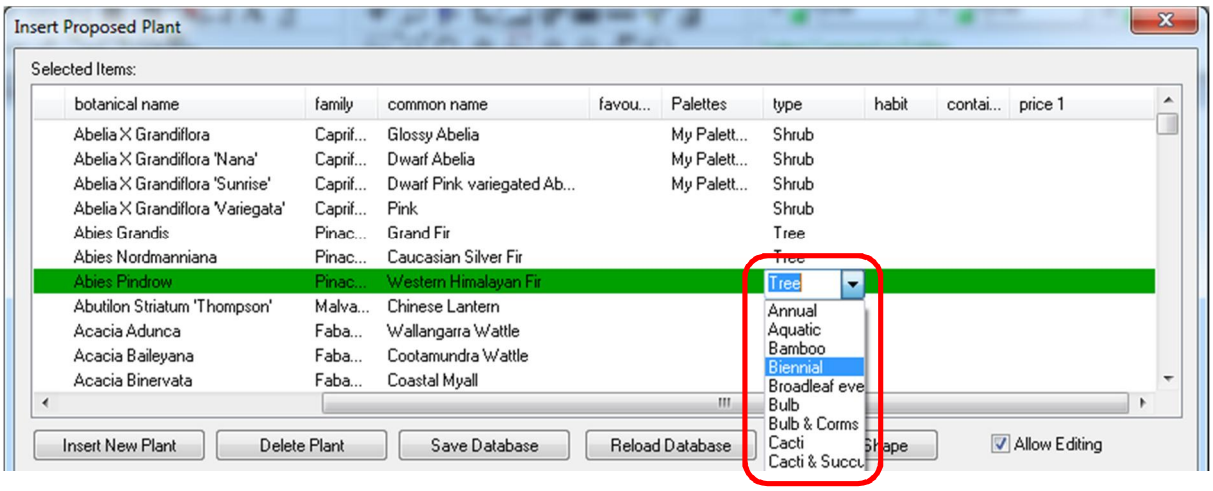



Fig. 56 – Drop down list for type of plant/tree

When such a list is available you cannot type something that is not already in the list; you can only select data from the list. You can, however, edit and add to the list by editing the database in Excel. See Appendix 2 – Editing the Plant Database in Excel for details on doing this.

To change or select the figure or image file for the chosen plant, simply click in the relevant preview window and the following dialog will be appear allowing you to browse for the appropriate file.

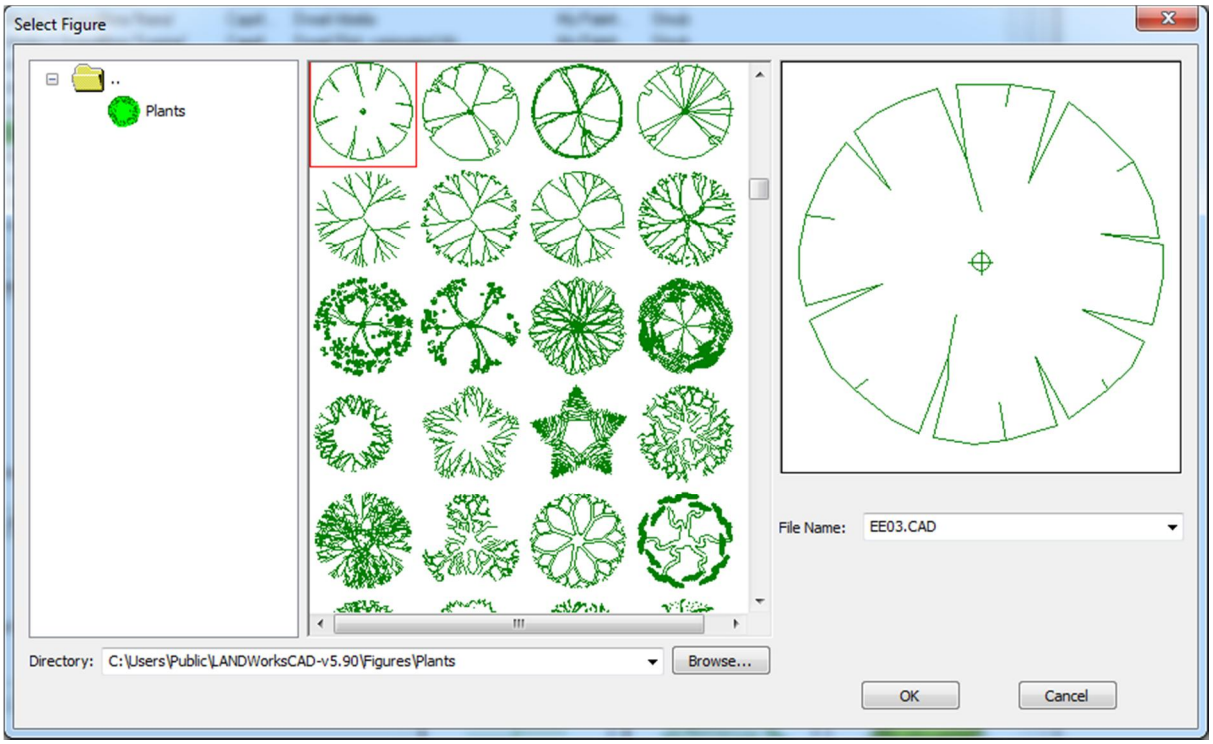



Fig. 57 – LANDWorksCAD Plant Browser for Basic and Detailed Figures (Plain View)

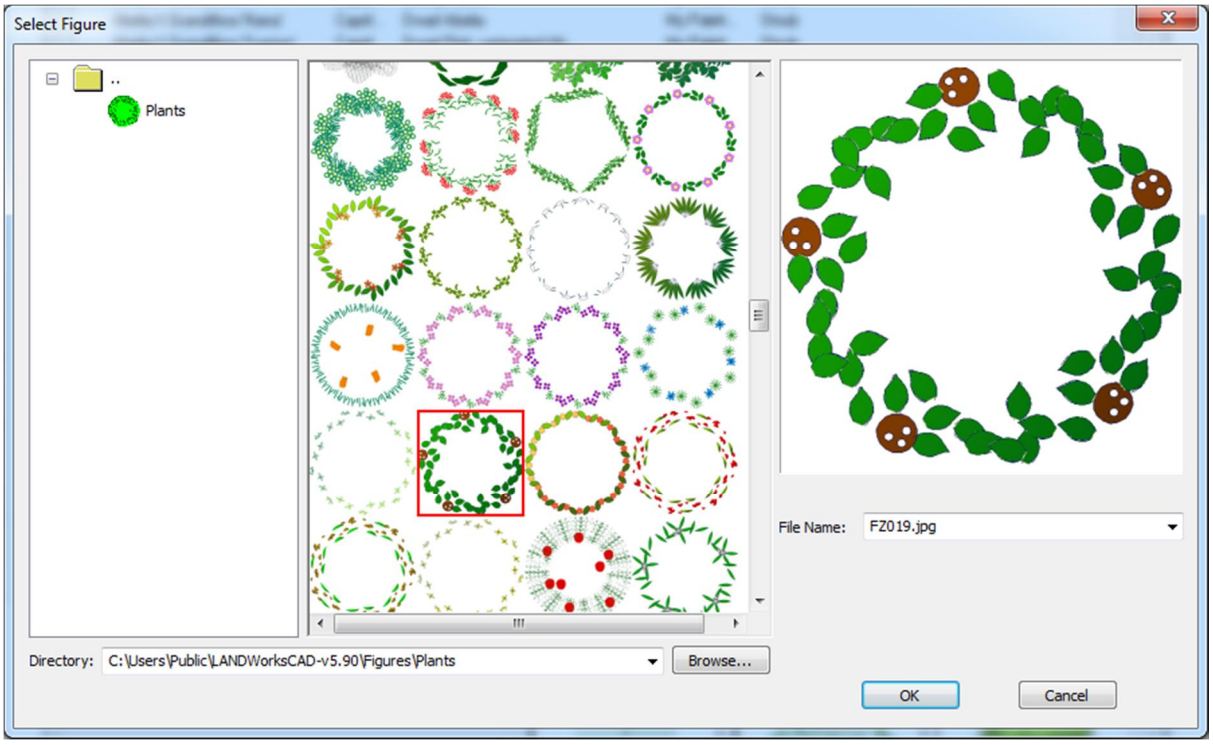



Fig. 58 – LANDWorksCAD Plant Browser for Image Files (Plain View)

You may use the Browse button to choose a different folder location.

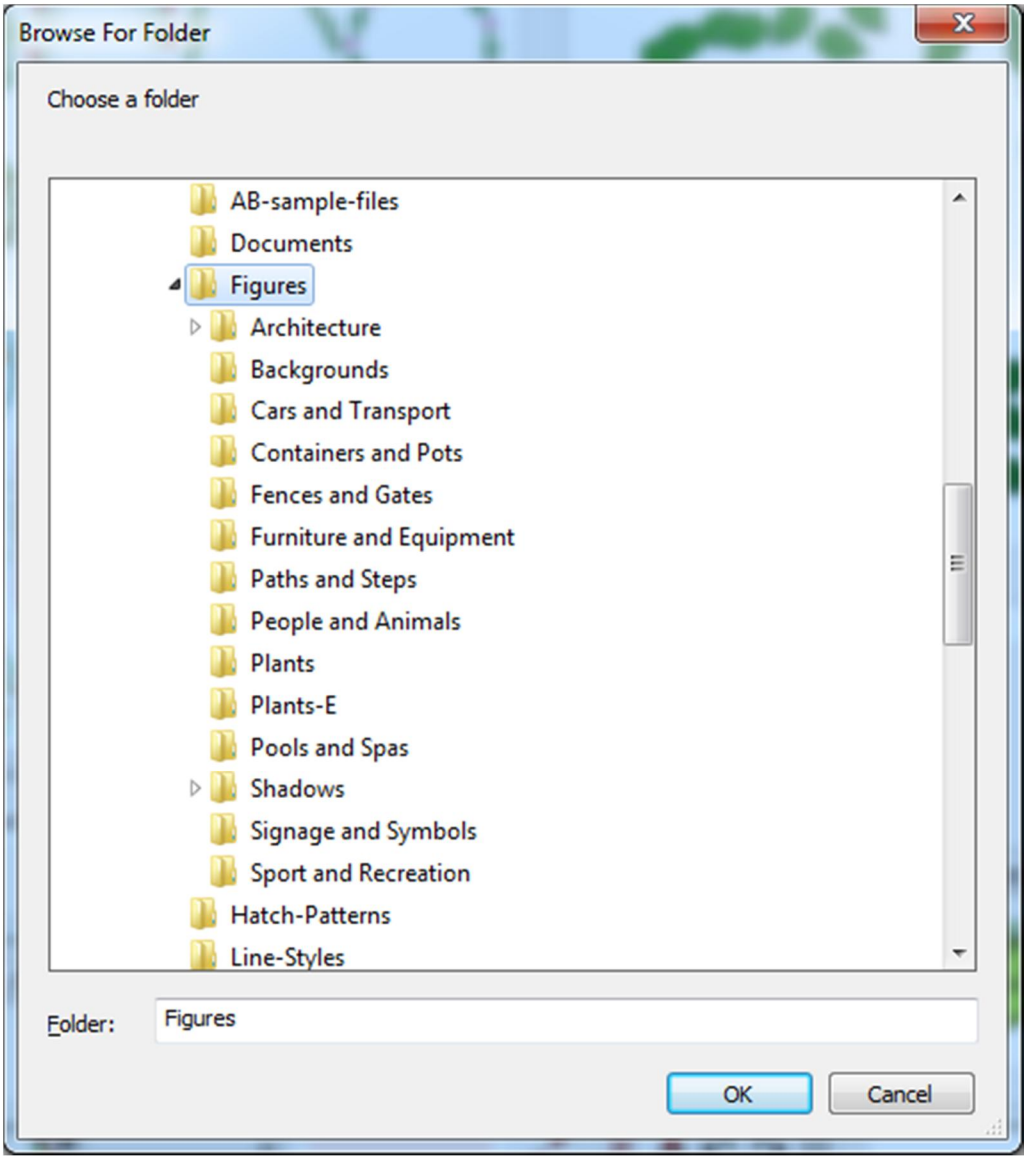



Fig. 59 – Browsing to a different folder location

When you select a plant figure or image using this technique, LANDWorksCAD is editing data to columns you can't see, "behind the scenes". This data is the path and filename of the selected figure/image file. If you cancel the dialog box, the following message will appear:

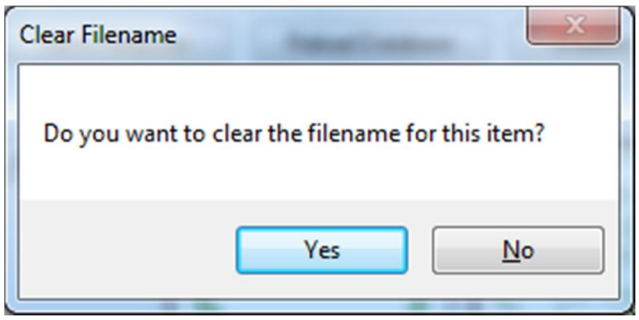



Fig. 60 – This dialog box will appear when no plant has been selected

Click the Yes button if you want to completely clear the filename data that was entered, if any. Click the No button if you want to retain the filename data that was there, if any.

## Note

1. When browsing for figures, the "Files of type" section of the dialog box is limited to "CAD Files *.cad" so you will only see LANDWorksCAD type files.

2. When browsing for image files, the "Files of type" section of the dialog box is limited to "Image Files *.bmp, *.jpg, *.png" so you will only see those types of files.

3. Elevation/3D files have an "-E" at the end of their name for ease of identification. Selecting the appropriate plant figure/image file is a simple process, but there is one important prerequisite – the figure or image file must exist before it can be selected, i.e., it must have been drawn/created first!

## Important Note

When you have finished editing your plants, it is vitally important that you save the changes to the database by clicking the "Save Database". If you don't, you will lose all the changes.

## Shadow Shape

Shadow Shapes can be defined when editing the plant database.

For more information about Shadow Shapes and how they work in LANDWorksCAD refer to the Plant Display Switching command.

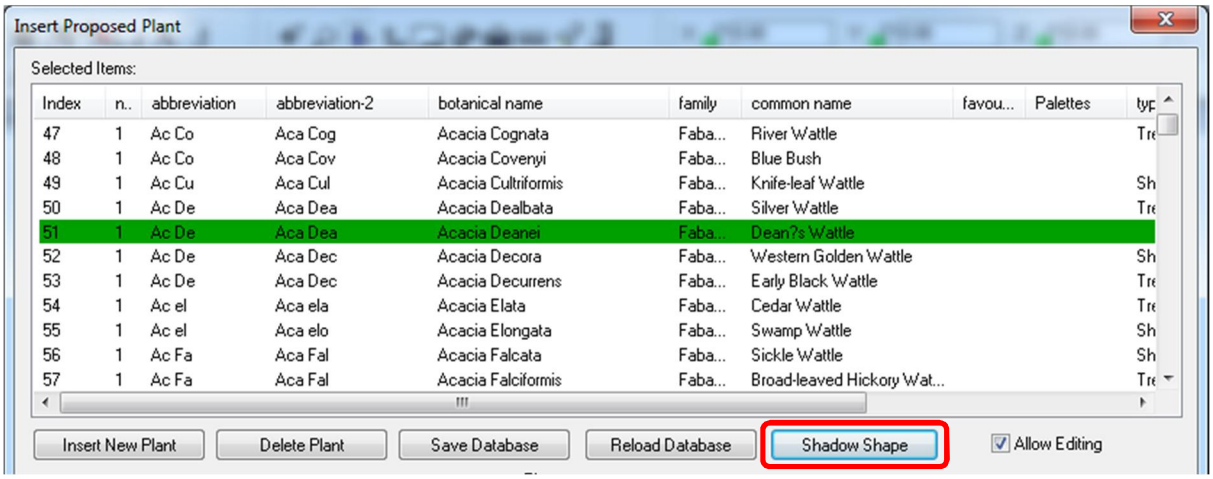

Insert Proposed Plant
Selected Items:
Index n.. abbreviation abbreviation-2 botanical name family common name favou... Palettes typ
47 1 Ac Co Aca Cog Acacia Cognata Faba... River Wattle Tre
48 1 Ac Co Aca Cov Acacia Covenyi Faba... Blue Bush
49 1 Ac Cu Aca Cul Acacia Cultriformis Faba... Knife-leaf Wattle Sh
50 1 Ac De Aca Dea Acacia Dealbata Faba... Silver Wattle Tre
51 1 Ac De Aca Dea Acacia Deanei Faba... Dean?s Wattle
52 1 Ac De Aca Dec Acacia Decora Faba... Western Golden Wattle Sh
53 1 Ac De Aca Dec Acacia Decurrens Faba... Early Black Wattle Tre
54 1 Ac el Aca ela Acacia Elata Faba... Cedar Wattle Tre
55 1 Ac el Aca elo Acacia Elongata Faba... Swamp Wattle Sh
56 1 Ac Fa Aca Fal Acacia Falcata Faba... Sickle Wattle Sh
57 1 Ac Fa Aca Fal Acacia Falciformis Faba... Broad-leaved Hickory Wat... Tre
Insert New Plant
Delete Plant
Save Database
Reload Database
Shadow Shape
Allow Editing

Fig. 61 – When editing the plant database, the Shadow Shape button will be enabled

Clicking on the Shadow Shape button it is possible to select any of the pre-defined shadow styles. (You can create and add more styles if desired).

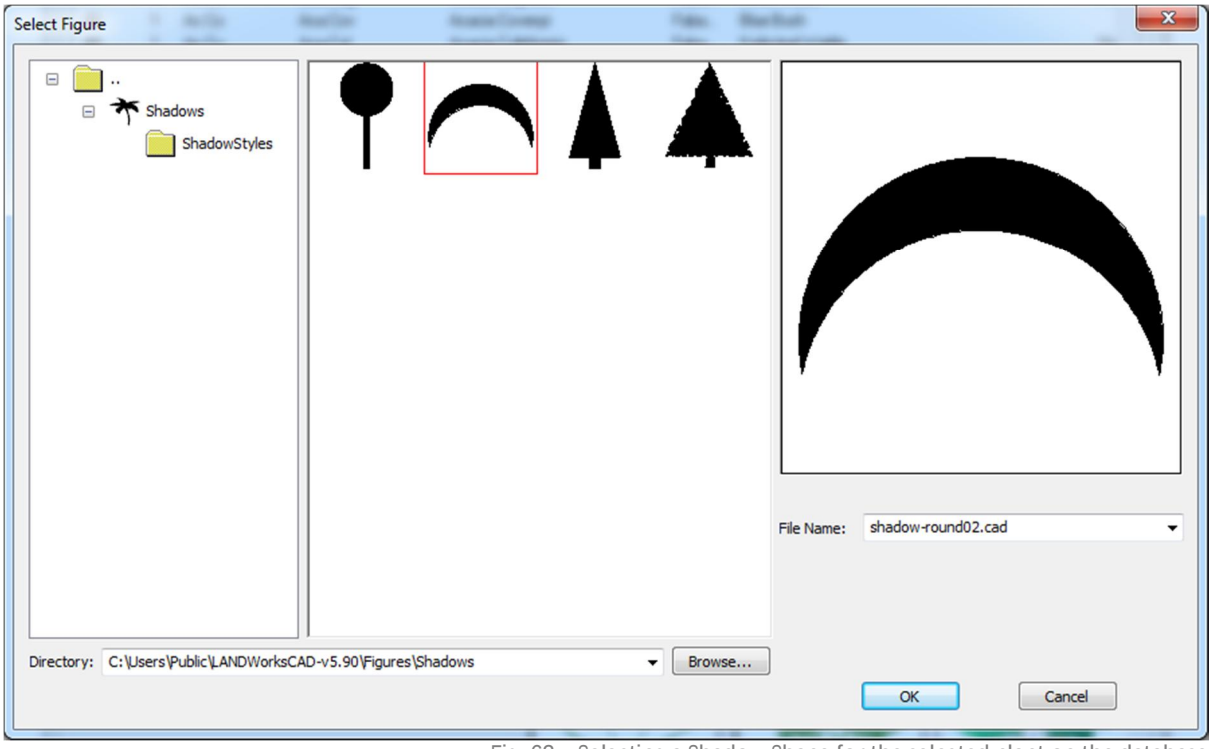



Fig. 62 – Selecting a Shadow Shape for the selected plant on the database

## Adding New Plants

There are two stages to adding a new plant to the database:

1. Entering the data, and
2. Selecting the appropriate figures and image files to represent that plant.

### Entering the data

When the Insert New Plant button is clicked, a blank row is inserted above the plant that is currently selected in the "Selected Items" list. The relevant data for the new plant can then be typed in.

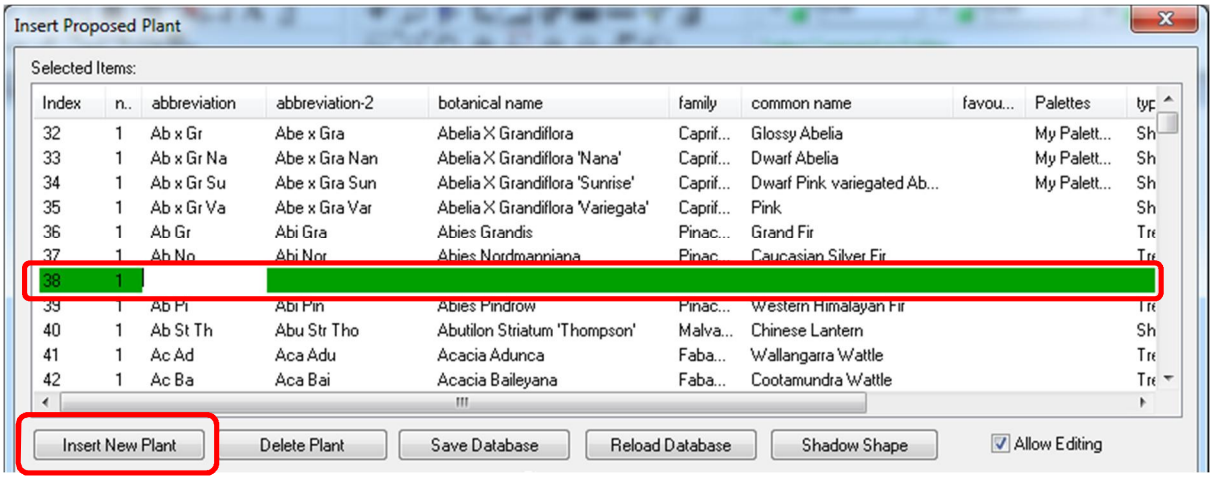

Insert Proposed Plant
Selected Items:
Index n.. abbreviation abbreviation-2 botanical name family common name favou... Palettes typ
32 1 Ab x Gr Abe x Gra Abelia X Grandiflora Caprif... Glossy Abelia My Palett... Sh
33 1 Ab x Gr Na Abe x Gra Nan Abelia X Grandiflora 'Nana' Caprif... Dwarf Abelia My Palett... Sh
34 1 Ab x Gr Su Abe x Gra Sun Abelia X Grandiflora 'Sunrise' Caprif... Dwarf Pink variegated Ab... My Palett... Sh
35 1 Ab x Gr Va Abe x Gra Var Abelia X Grandiflora 'Variegata' Caprif... Pink Sh
36 1 Ab Gr Abi Gra Abies Grandis Pinac... Grand Fir Tre
37 1 Ab No Abi Nor Abies Nordmanniana Pinac... Caucasian Silver Fir Tre
38 1
39 1 Ab Pi Abi Pin Abies Pindrow Pinac... Western Himalayan Fir Tre
40 1 Ab St Th Abu Str Tho Abutilon Striatum 'Thompson' Malva... Chinese Lantern Sh
41 1 Ac Ad Aca Adu Acacia Adunca Faba... Wallangarra Wattle Tre
42 1 Ac Ba Aca Bai Acacia Baileyana Faba... Cootamundra Wattle Tre
Insert New Plant
Delete Plant
Save Database
Reload Database
Shadow Shape
Allow Editing

Fig. 63 – Adding new plant information on a new row

To enter the data, click on the blank row, in the column you want to edit and type in the required data. When you select the blank row it will be highlighted in green, but the part of the row in the column you selected will remain white.

You can also press the Tab key to move to the next column.

Some columns provide a list of data to choose from, indicated by a downward pointing triangle. Clicking on the triangle displays the list, as shown below:

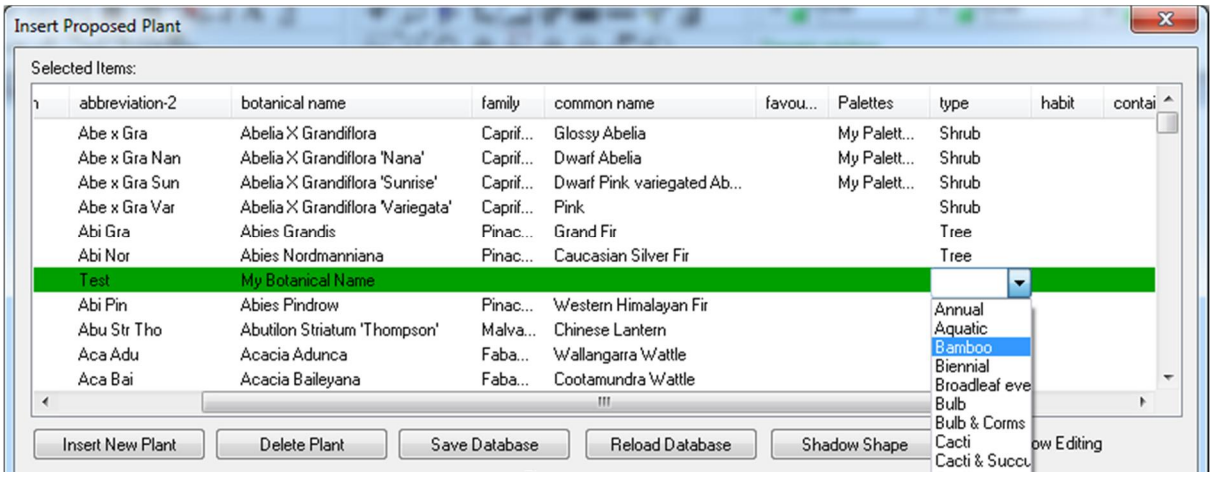



Fig. 64 – Selecting the appropriate Plant Type from the dropdown list

When such a list is available you cannot type in something that is not already in the list; you can only select data from the list. You can, however, edit and add to the list by editing the database in Excel. Appendix 2 – Editing the Plant Database in Excel for details on doing this.

Multiple new plants can be inserted by simply clicking the button again and entering the data.

It's up to you to decide how much data you enter. Most columns are not compulsory. Refer to Appendix 1 – The LANDWorksCAD Plant Database for details on the database.

The Botanical Name MUST be unique in the database.

## Selecting the figures and images

Once the botanical data has been entered, appropriate LANDWorksCAD figures and image files must be selected to represent the plant in the drawing.

To select the plant figure or image file, simply click in the relevant preview box and browse and select the appropriate file, as described in the Editing Plants from the List section above.

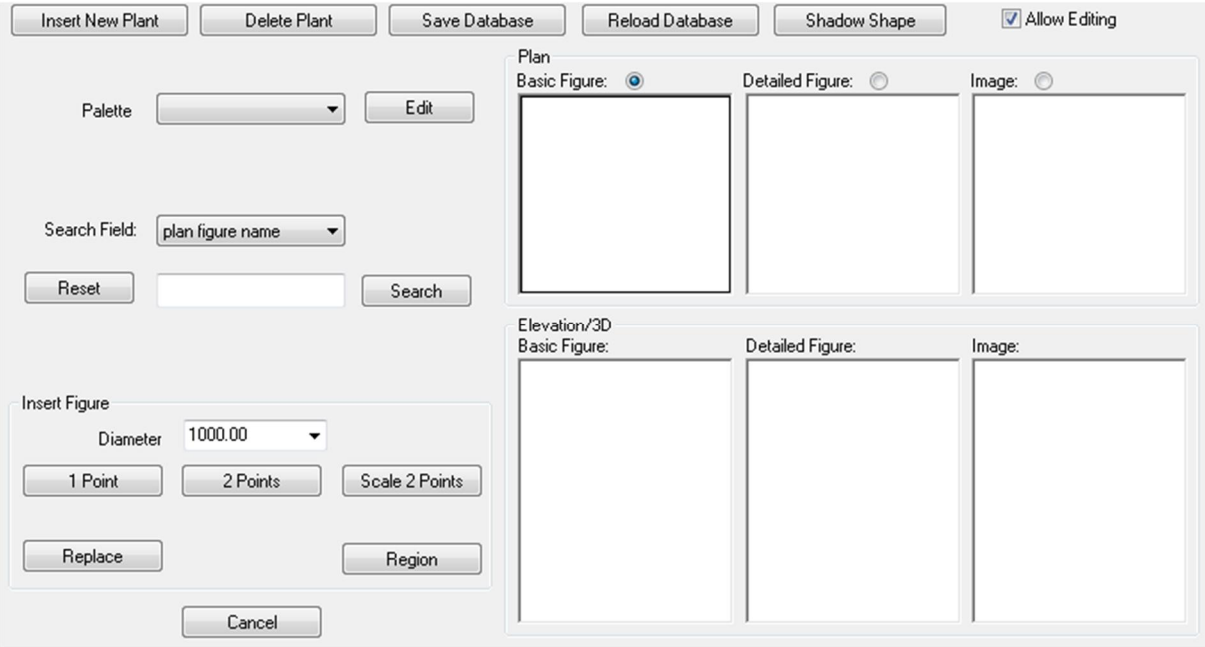



Fig. 65 – Blank previews for new plants added by default. Click on any to select the appropriate figure or image

### Notes

Note that all the preview boxes do not have to be filled in, but at least one plan item must be, otherwise there will be nothing to see when the plant is inserted. It is recommended to at least have all the plan items chosen.

The Elevation/3D figures and images are not required at all if you are only working in 2D.

Concept Plants have a Concept Figure and Image for Plan and Elevation. Existing Plants have only Plant Figure and Image. Proposed Plants have Basic, Detail and Image Plan and Elevation figures.

### Important Note

When you have finished inserting your plants, it is vitally important that you save them to the database by clicking the “Save Database” button. If you don’t, you will lose them.

## Deleting Plants

To delete a plant from the database, select the plant by clicking anywhere in its row and then click the Delete Plant button.

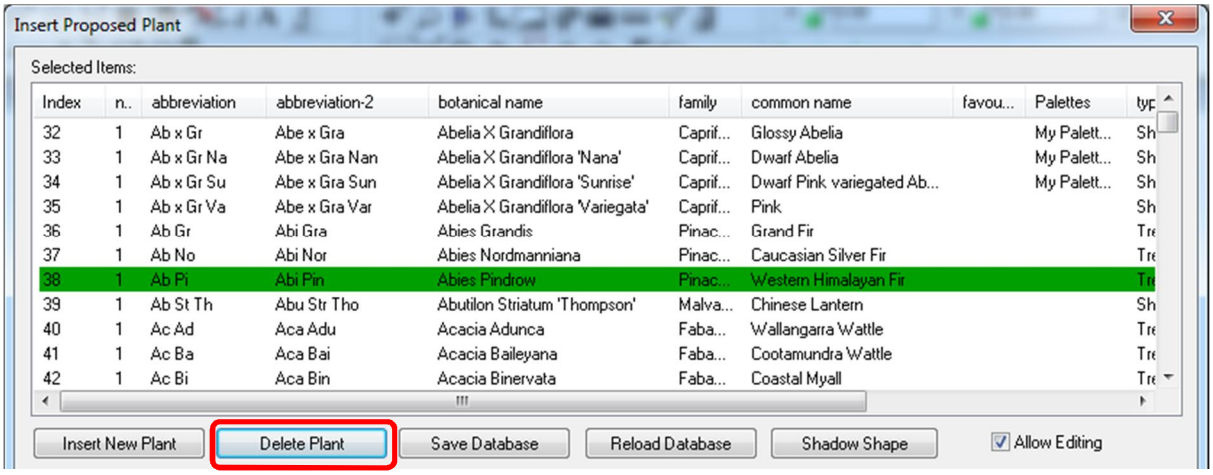

Insert Proposed Plant
Selected Items:
Index n.. abbreviation abbreviation-2 botanical name family common name favou... Palettes typ
32 1 Ab x Gr Abe x Gra Abelia X Grandiflora Caprif... Glossy Abelia My Palett... Sh
33 1 Ab x Gr Na Abe x Gra Nan Abelia X Grandiflora 'Nana' Caprif... Dwarf Abelia My Palett... Sh
34 1 Ab x Gr Su Abe x Gra Sun Abelia X Grandiflora 'Sunrise' Caprif... Dwarf Pink variegated Ab... My Palett... Sh
35 1 Ab x Gr Va Abe x Gra Var Abelia X Grandiflora 'Variegata' Caprif... Pink Sh
36 1 Ab Gr Abi Gra Abies Grandis Pinac... Grand Fir Tre
37 1 Ab No Abi Nor Abies Nordmanniana Pinac... Caucasian Silver Fir Tre
38 1 Ab Pi Abi Pin Abies Pindrow Pinac... Western Himalayan Fir Tre
39 1 Ab St Th Abu Str Tho Abutilon Striatum 'Thompson' Malva... Chinese Lantern Sh
40 1 Ac Ad Aca Adu Acacia Adunca Faba... Wallangarra Wattle Tre
41 1 Ac Ba Aca Bai Acacia Baileyana Faba... Cootamundra Wattle Tre
42 1 Ac Bi Aca Bin Acacia Binervata Faba... Coastal Myall Tre
Insert New Plant
Delete Plant
Save Database
Reload Database
Shadow Shape
Allow Editing

Fig. 66 – Deleting a Proposed Plant from the database

The following confirmation dialog box will appear (with the appropriate plant name, of course):

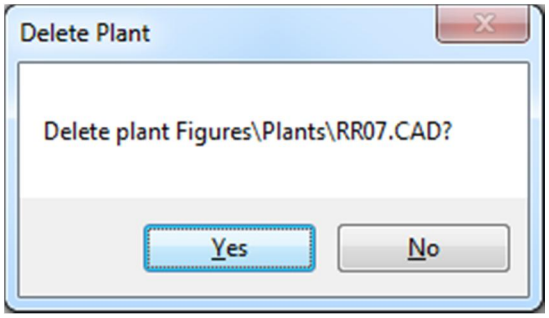



Fig. 67 – Delete Confirmation Dialog Box

Click the Yes button to confirm you want to delete the plant from the database. Click the No button if you do not want to delete the plant.

### Important Note

When you have finished deleting plants, it is vitally important that you save the changes to the database by clicking the Save Database button. If you don't, the plants will not be permanently deleted.

## Save Database

After you have done any editing, inserting or deleting of plants, you should click the "Save Database" button so the changes are stored permanently in the database. If you don't, the changes will not be remembered by LANDWorksCAD, i.e., plants you thought you added to the database will not be there, plants you thought you deleted will still be there, etc.

Fig. 68 – Click on Save Database to save the changes

## Important Note

You can edit the database in Excel while LANDWorksCAD is running, but you cannot and must not edit the database from within LANDWorksCAD while the database is open in Excel.

This is not a limitation of LANDWorksCAD; it is a simply how files work in Windows – you cannot work on the same file, at the same time, with two different programs. If the database is open in Excel when you save it from LANDWorksCAD, you will get an error message and LANDWorksCAD will lock up or crash.

## Reload Database

Clicking the "Reload Database" button forces LANDWorksCAD to re-read the plant database and show any changes that have occurred since your LANDWorksCAD session started.

Fig. 69 – Reload the plant database after saving the changes

This would be necessary if the database was edited in Excel while LANDWorksCAD was running.

It would also be necessary if you have been editing the plant database from within LANDWorksCAD and have made a few mistakes (it does happen!) and want to start again.

## Really Important Note

Be sure to make a duplicate copy of the Excel file that you modify so that all your hard work is not lost if your computer gets sick or stolen!

Be Sure to Back-up your data, drawings and any figures or image files you create. In fact you should backup all your LANDWorksCAD data files regularly.

If you require help with this please be sure to contact your nearest LANDWorksCAD reseller or CAD international support support@cad.com.au

# Labelling Plants

| | |
|---|---|
| Label Concept Plants | ✓ |
| Label Existing Plants | ✓ |
| Label Proposed Plants | ✓ |

## Label Concept Plants

This command allows you to label concept plants previously inserted using the Insert Concept Plant command for identification on the landscape drawing.

When the command is selected, the following dialog box is displayed.

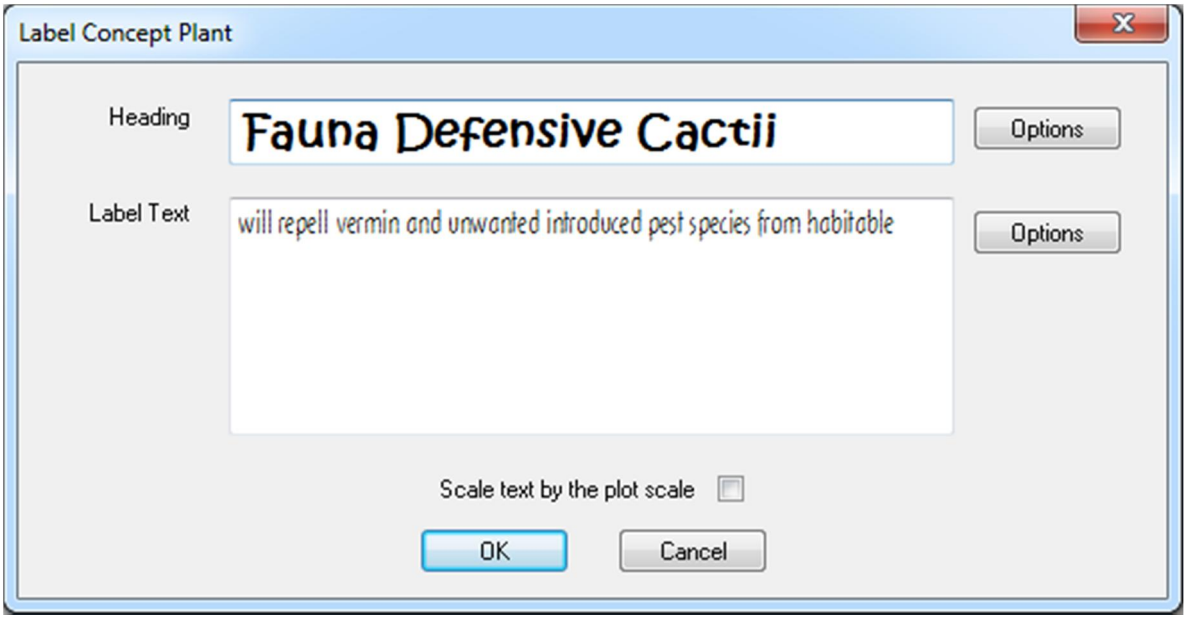



Fig. 70 – Label Concept Plant Dialog Box

By default the Heading and Label Text will be pre-filled with the information from the database. You may change the text directly in the dialog box.

### Scale Text by the Plot Scale

This tick box controls whether the text size entered is automatically multiplied by the view's Plot Scale for on-screen display.

See Text scaling in your core CAD software manual for details on scaling text.

It is also possible to change the Font style by clicking on the Options button.

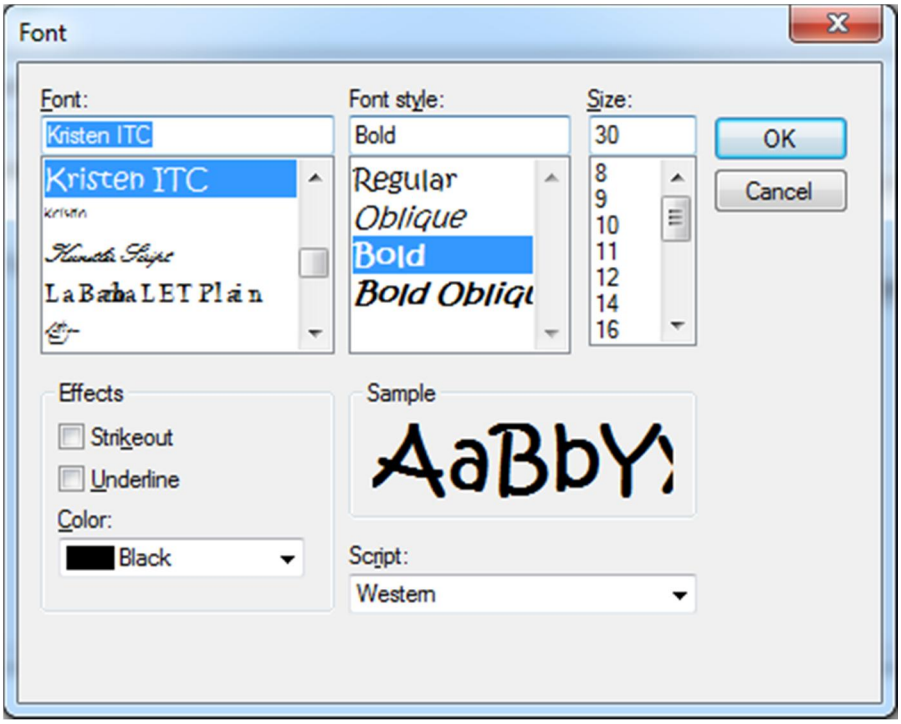



Fig. 71 – Changing Fonts for Concept Plant Labelling

## Inserting the Label

When the OK button is clicked, LANDWorksCAD scans the drawing for any concept plants that haven't been labelled. If it finds some, it highlights in grey the last plant inserted and its label is attached to your crosshair letting you position it where it suits you.

The label for the plant is comprised of the text in the "Heading" and "Label" columns of the plant database. These columns are displayed in the "Selected Items" area of the "Insert Concept Plant" dialog box.

When you have placed the label for that concept plant, if there are any others that have not been labelled, the next one is highlighted, its label attached to your crosshair and so on.

## Note

1. You do not have to select the plants at any stage

2. The selection of plants is done in reverse order, i.e., the last plant inserted is highlighted first, then the second last plant inserted, etc.

3. It is not intended that each concept plant be labelled individually, as by their nature concept plants are often grouped together to describe an area of planting and so only one label per grouping may be required.

4. To label the other groups of the same planting simply copy the labels using regular commands.

The following steps show how the command works.

The labels are inserted to match the plot scale.

The command is selected and the text properties set.  When the OK button is clicked, the last plant is highlighted in grey and its label attached to the crosshair, as shown below.

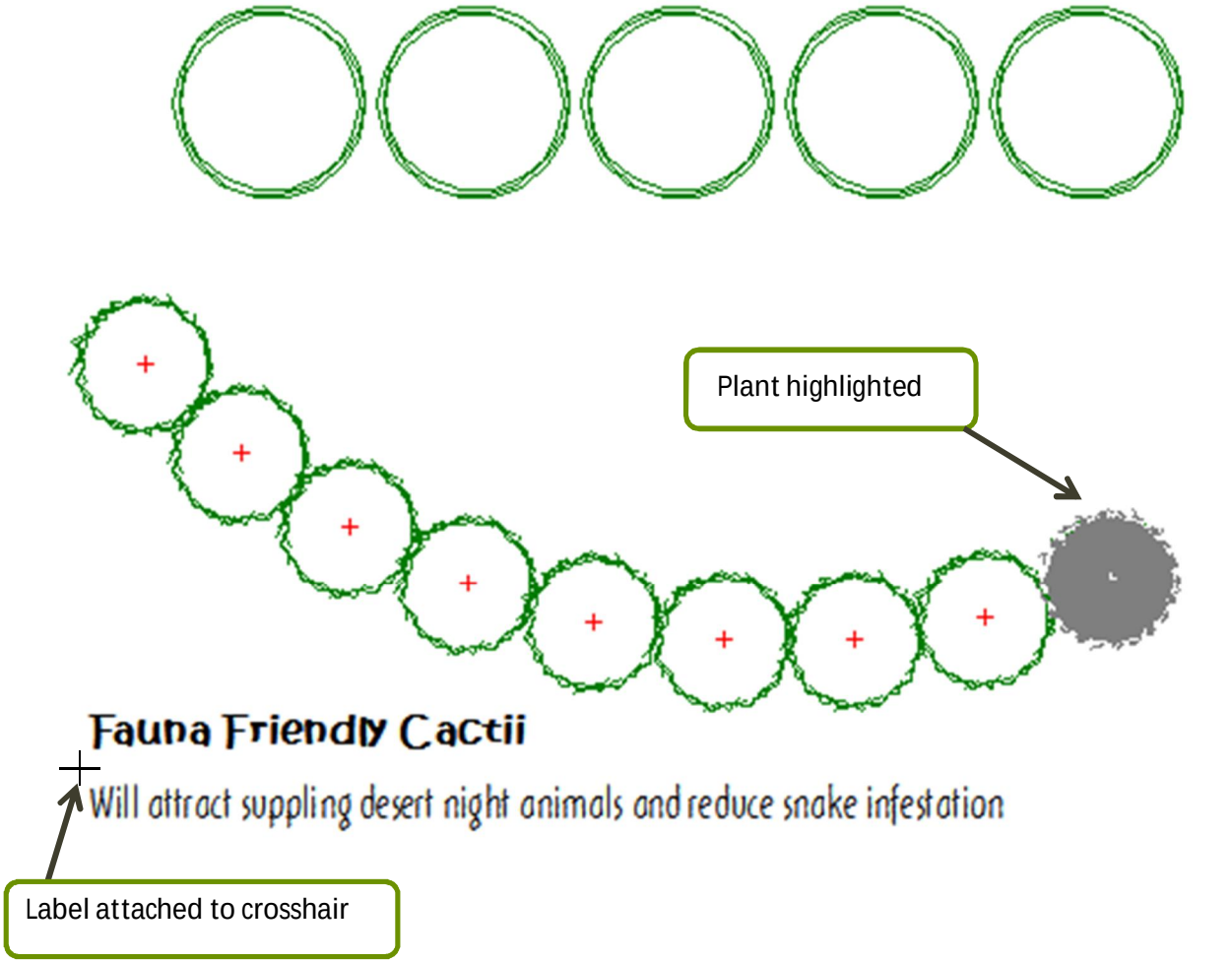

Plant highlighted
Fauna Friendly Cactii
Will attract suppling desert night animals and reduce snake infestation
Label attached to crosshair

Fig. 72 – First, it labels the last Concept Plant inserted

When the first label is inserted, the next concept plant is highlighted and its label is attached to the crosshair, as shown below.

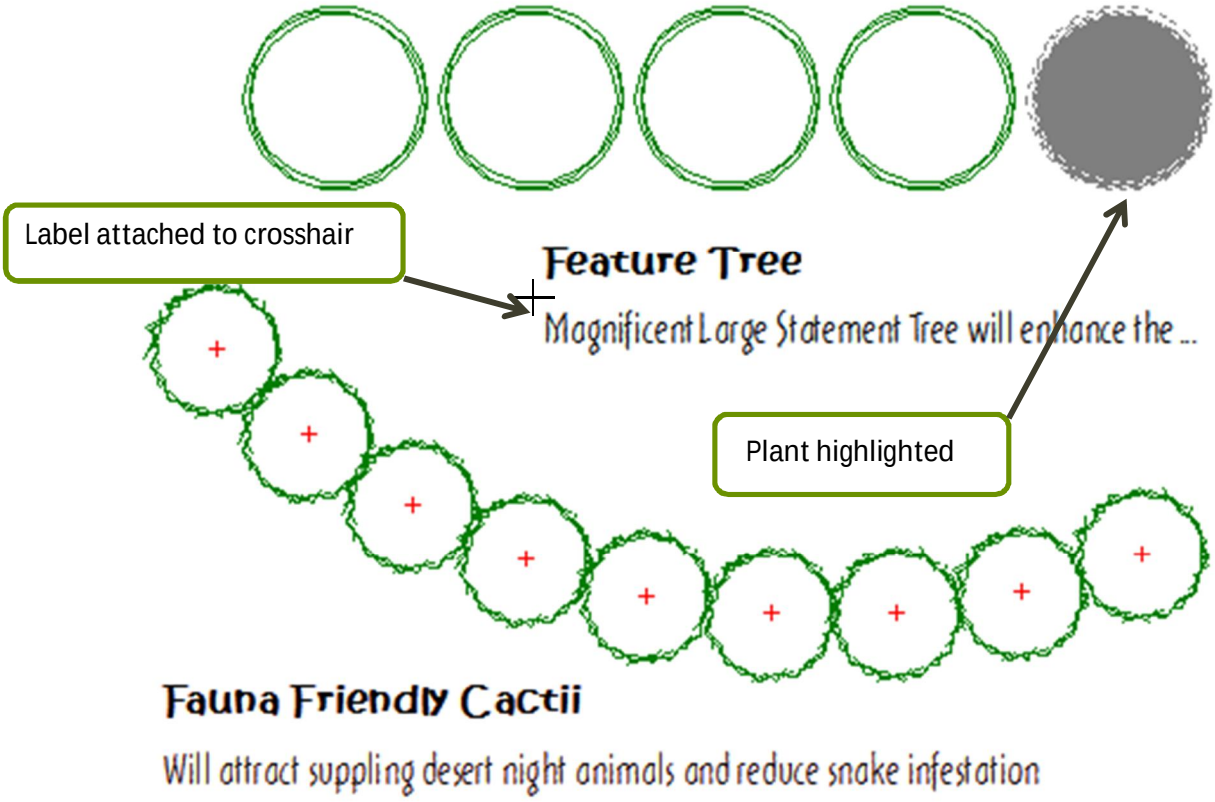

Label attached to crosshair
Feature Tree
Magnificent Large Statement Tree will enhance the ...
Plant highlighted
Fauna Friendly Cactii
Will attract suppling desert night animals and reduce snake infestation

Fig. 73 – Once the first label is placed, it continues to the next one

When the last label has been inserted, the command stops.

## Label Existing Plants

It labels existing plants inserted from the LANDWorksCAD Excel plant database using the Insert Existing Plant command for identification on the landscape drawing and for inclusion in a schedule of existing plants.

The data entered in this command is typically collected when the client's property is surveyed.

When the command is selected, the following dialog box is displayed.

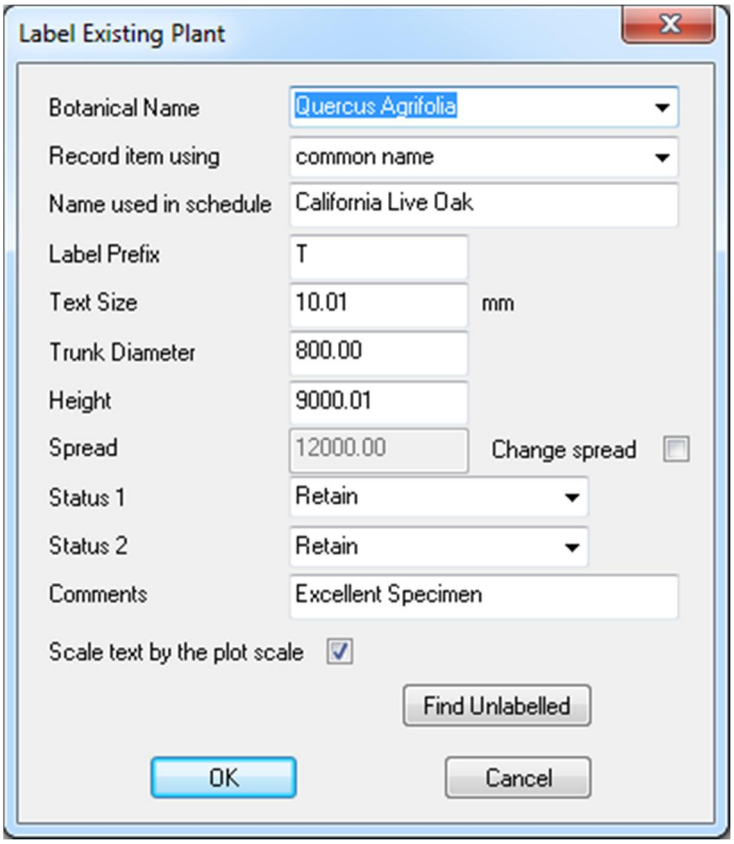



Fig. 74 – Label Existing Plants Dialog box

### Label Prefix

The Label Prefix is used to actually label the plant; the other data will be displayed in the Existing Plant Schedule when it is inserted. (Refer to the Existing Plant Schedule command)

## Note

For an existing plant figure to be included in the Existing Plant Schedule it MUST be labelled with this command first otherwise it won't know what it is.

An example of a label is shown below – the "T1" text.

Fig. 75 – Example of Labelled Existing Plant with prefix

## Botanical Name

This box lets you choose the botanical name of the existing plant you are about to label.

Clicking on the triangle at the end of the box displays a list of the botanical names from your plant database, as shown below:

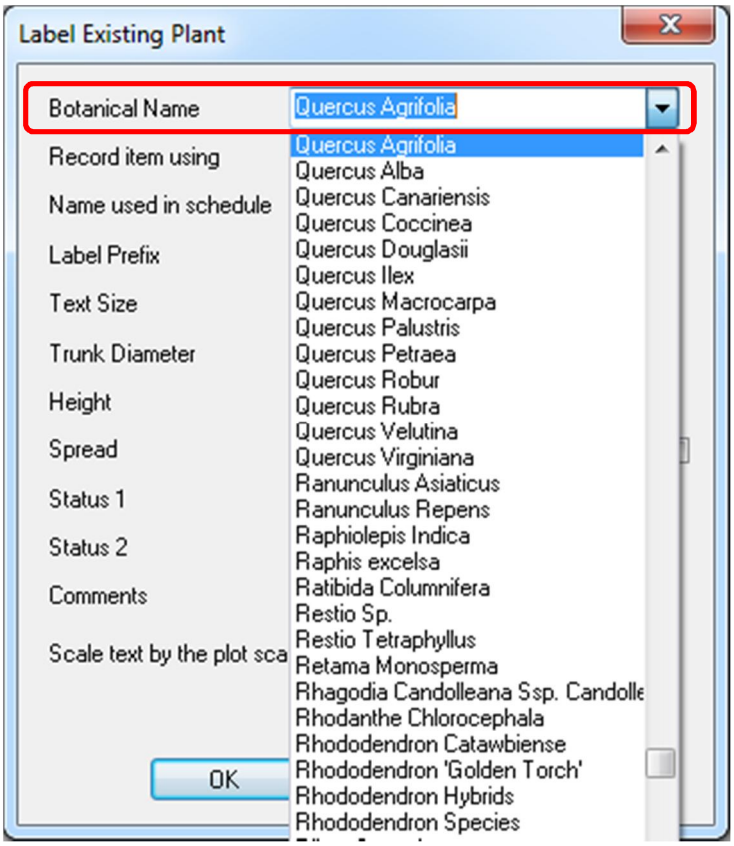



Fig. 76 – Displaying the different botanical names available

## Label Item (Record Item Using)

This box lets you choose which data from the database will be used to identify the existing plant in the Existing Plant Schedule.

Clicking on the triangle at the end of the box displays a list of the field names from your plant database, as shown below:

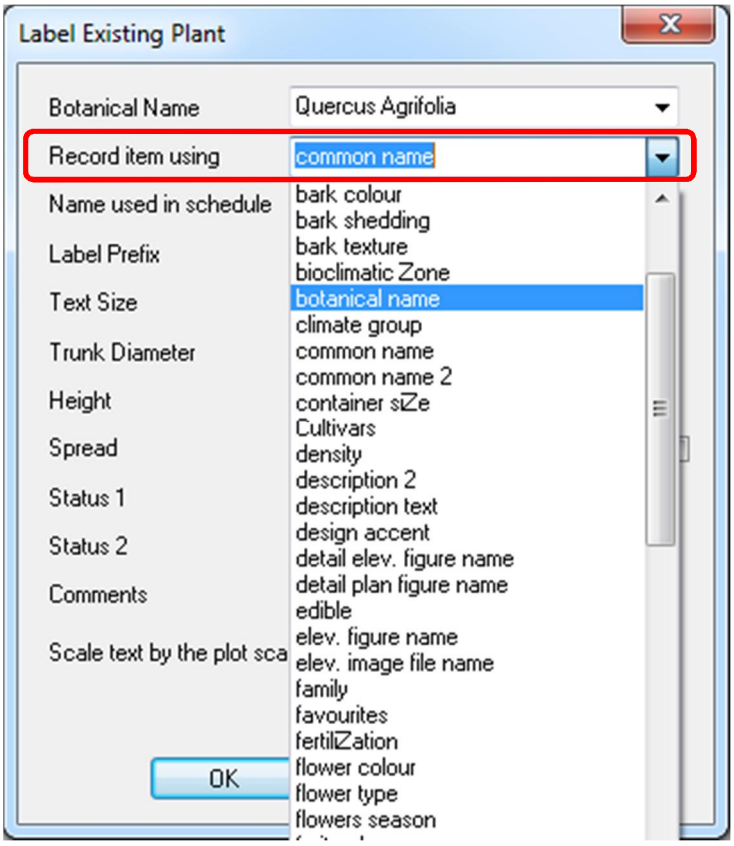



Fig. 77 – Choosing the field to display to Label Existing Plants

## Name used in schedule

This box displays the actual identifying text that will be displayed in the Existing Plant Schedule, e.g., “Ac bu” in the example below.

In this example, the tree being labelled is an Acacia buxifolia, but it will be identified in the Existing Plant Schedule with its abbreviation, ie, Ac bu.

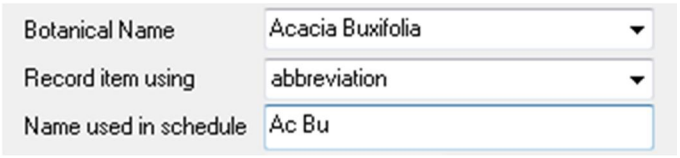



Fig. 78 – Setting up the different parameters to Label Existing Plants

## Label Prefix

This box lets you enter text that will be displayed as a label for the plant on the drawing. Any amount of text can be entered.

Numbers are automatically appended to the prefix, ensuring the labels are unique.

Typically the prefix would be a code to identify the type of plant, e.g., "T" for tree, "S" for shrub, etc. but it can be anything.

Examples are shown below.

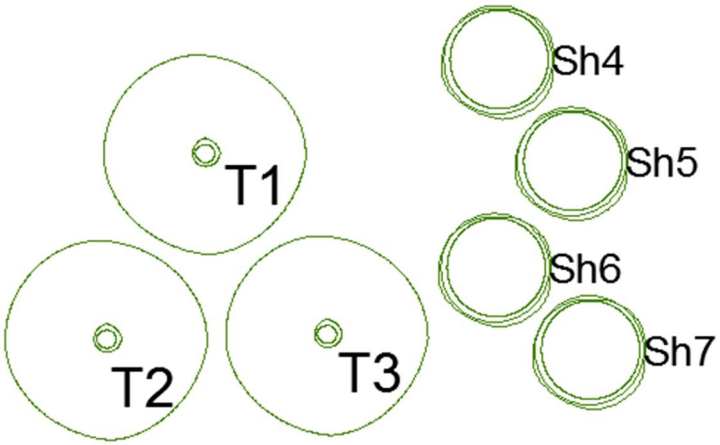



Fig. 79 – Example of Labelled Existing Plants using different prefixes

## Text Size

This box lets you define the size of the label text. Text size is influenced by the bottom tick box, Scale Text by the Plot Scale and can work in either of the following two ways

1. If the Scale Text by the Plot Scale option is checked, then the text size entered is automatically multiplied by the view's Plot Scale and the text is displayed on the screen at that scaled size.

   For example, if a text size of 4mm is entered and the View Plot Scale is 100, the text will appear at 400mm high and will appear on paper at the desired 4mm when printed at 1:100

   This technique lets you define the text size based on the height you want it to be when it is printed on paper. If the Plot Scale is changed for some reason, the on-screen text height will automatically adjust but, providing you print the drawing at the specified Plot Scale, the text will always print at the height specified.

   Repeating: A text height setting of 4mm and a Plot Scale value of 100 produces on-screen text at 400mm high. Printing this drawing at a scale of 1:100 will produce text 4mm high on the paper. Change the views Plot Scale to 200 and the on-screen text will become 800mm high, but printing the drawing at a scale of 1:200 will still produce text 4mm high on the paper.

2. If the Scale Text by the Plot Scale option is not checked, then the text size entered is real life size. It is not, in any way, affected by the view's Plot Scale.

   For the text to be visible on the screen, the size must be calculated accordingly.

   This technique will produce printed text of a varying size if the Print Scale is changed.

   For example, if a text height of 400mm is specified and the Plot Scale is 100, the printed text will be 4mm high, but if the Plot Scale is changed to 200, the printed text would be 2mm high.

## Trunk Diameter

This box lets you enter the actual diameter of the trunk of the plant as measured on site.

## Height

This box lets you enter the actual height of the plant as measured on site.

## Spread

This box lets you enter the actual spread, or foliage diameter, of the plant as measured on site. The value of the 'Spread' is used to automatically re-size the figure to the correct diameter when selected.

## Status 1

This box lets you select from four, standard, predefined status notes to be included in the Existing Plant Schedule.

Clicking on the triangle at the end of the box displays the four notes, as shown below. Simply delete the note if you do not want it included in the schedule.

Fig. 80 – Selecting the Status 1

## Status 2

This box lets you select from four, standard, predefined status notes to be included in the Existing Plant Schedule.

Clicking on the triangle at the end of the box displays the four notes, as shown below. Simply delete the note if you do not want it included in the schedule.

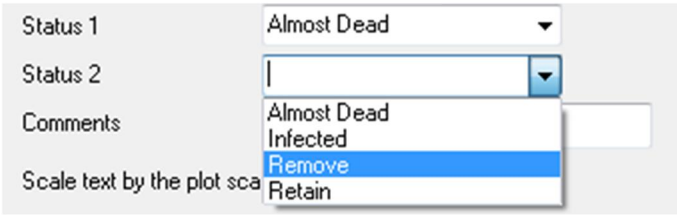



Fig. 81 – Selecting the Status 2 if desired

## Comments

This box lets you type in additional information to be included in the Existing Plant Schedule. The amount of text is not limited by the width of the box.

## Scale Text by the Plot Scale

This tick box controls whether the text size entered is automatically multiplied by the view's Plot Scale for on-screen display.

## Inserting the Label

When the OK button is clicked, the steps to label the plant are as follows:

1. Select the plant to label.

   When the plant is selected, it turns grey and the prefix label and number are attached to your crosshair, as shown below.

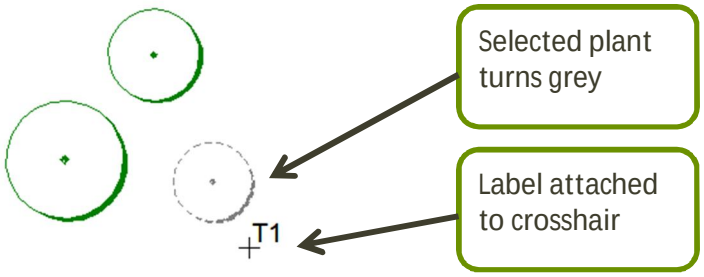



Fig. 82 – Selecting the plant will show the label attached to the crosshair

2. Position the label and click to insert it.
3. The label is inserted and the figure is re-sized to match the “spread” value entered, as shown below.

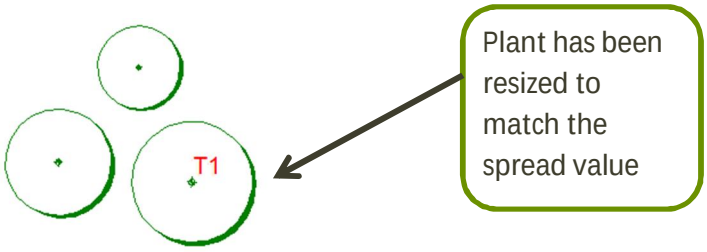



Fig. 83 – Inserting the label will also resize the plant if the spread value has been altered

4. The command is automatically re-run, letting you label more plants.

## Label Proposed Plants

This command labels proposed plants inserted using the Insert Proposed Plant command for easy identification on the landscape drawing. You can select the plant(s) to be labelled before or after running the command.

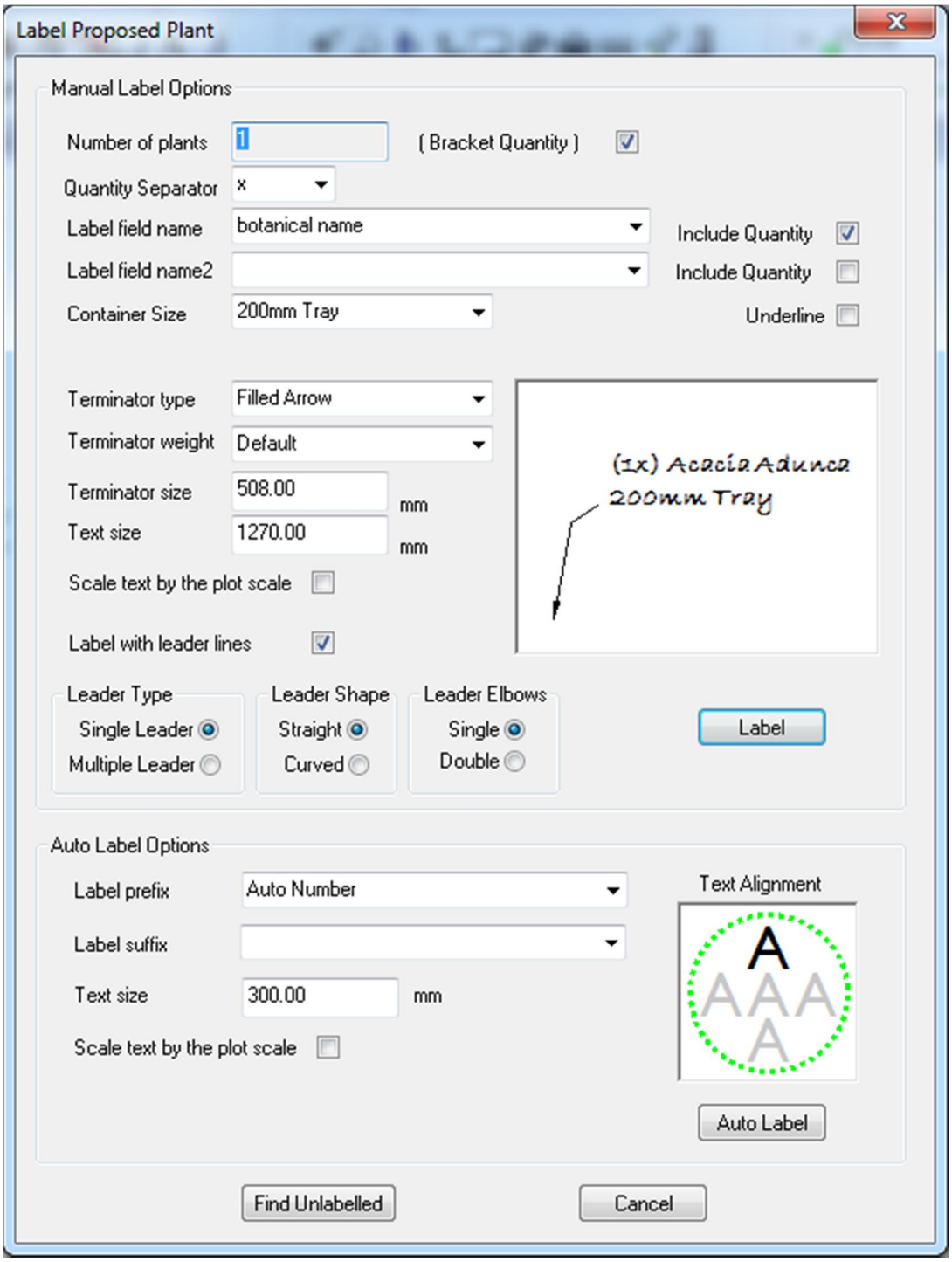



Fig. 84 – Label Proposed Plants Dialog Box

## Manual Label Options

Manual Labelling gives you a wide variety of options to label your plants. Below we explain each of the options available:

### Number of Plants

This box displays the number of plants that were selected prior to running the command. If no plants were selected prior to running the command this box displays 1 and you can only label one plant at a time. This box is not editable.

### Note

If you select multiple plants prior to running the command, make sure that:

1. You select only plants, and
2. You select the same species of plant

If you select entities other than plants, e.g., lines or circles, the following warning box will be displayed. LANDWorksCAD can only label plants.

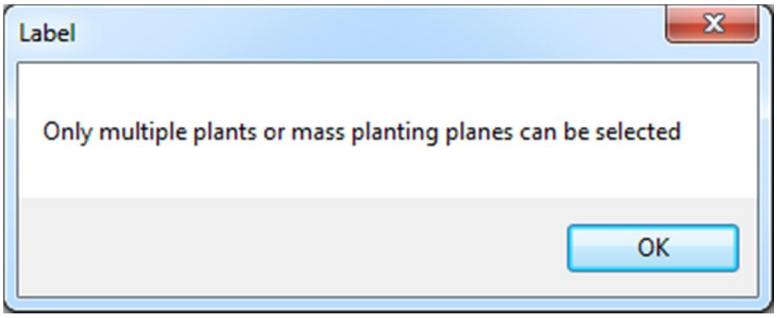



Fig. 85 – Warning dialog box when selecting other entities than plants

If you select more than one type of plant, eg, an Acacia buxifolia and an Acacia snodenii (which can look similar on the screen, depending on the figures used to represent them) the following message box will be displayed. LANDWorksCAD can only label one botanical name at a time.

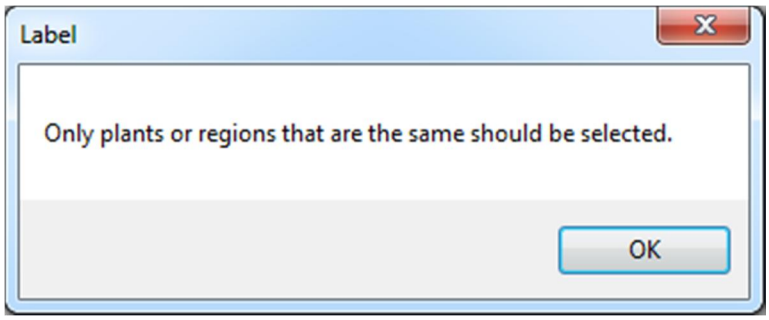
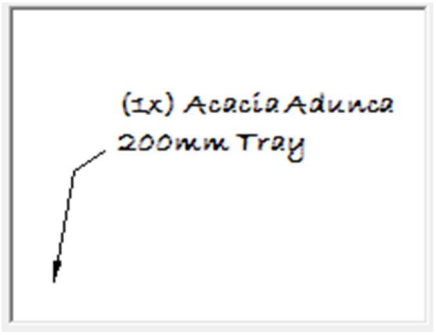



Fig. 86 – Warning dialog box when selecting different plant species

## Area Preview




The Area Preview shows an indication of how the label may look when inserted.

Changing different parameters such as the Bracket Quantity (enabled or disabled), Quantity Separator, Label Field Name and so on will reflect directly in the preview window.

## Bracket Quantity

Bracket Quantity adds brackets to the count of number of plants labelled.

Fig. 87 – Labelling example using brackets

## Quantity Separator

Quantity Separator adds a quantity marker to the label.

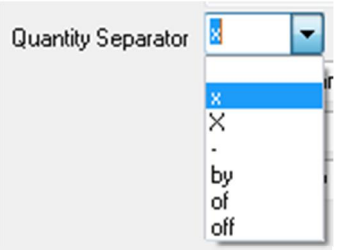


Fig. 88 – Two examples using different Quantity Separators

Leaving the Quantity separator blank won't add any separator to the plant quantity.

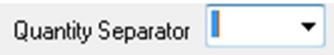


Fig. 89 – Only showing the plant quantity with no separator

## Label Field Name

This box lets you choose what data from the plant database is used to identify the plants. In the examples and dialog box above the botanical name was used, but any field from your plant database can be used, e.g., abbreviation or common name. Clicking on the triangle at the end of the box displays a list of the fields from your plant database, as shown below:

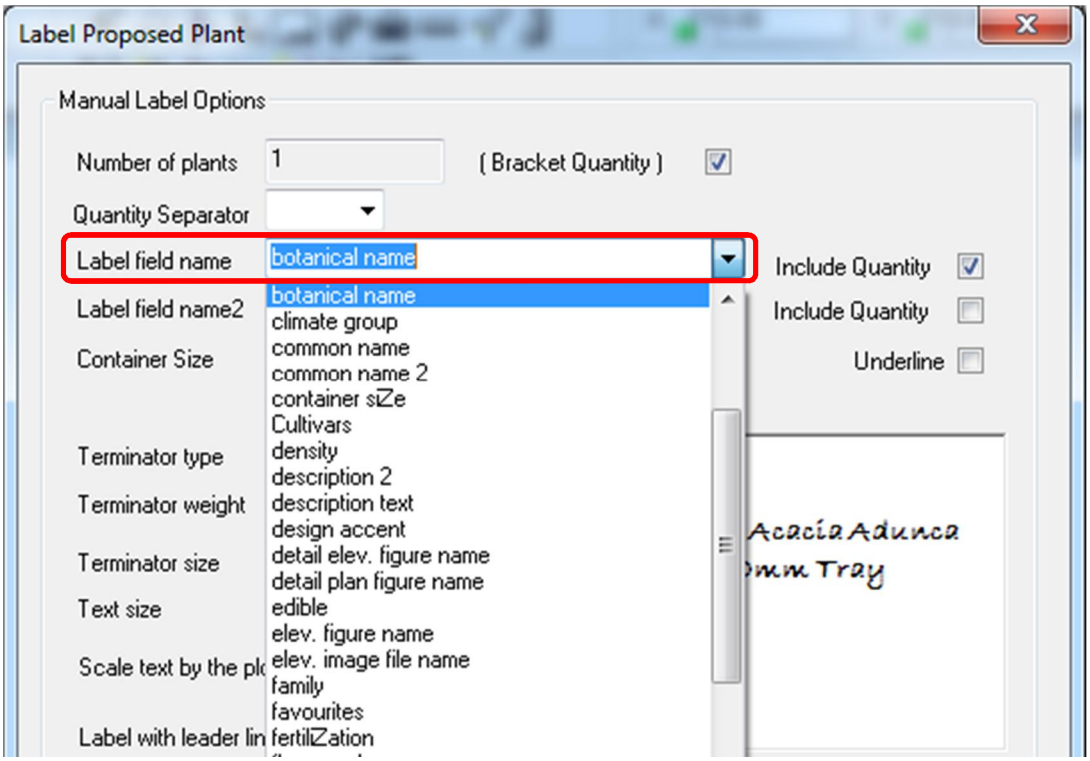



Fig. 90 – Choosing the Label Field Name will display all possible fields from the database

It is possible to use two different label field names (Label field name and Label field name2). Additionally, you may add the Container Size to the label.

## Include Quantity

If this box is ticked, the number of selected plants will be included in the label. If the box is not ticked, the number will not be displayed.

Fig. 91 –Include Quantity show the number of plants labelled

Note that when using two field names, as shown on Fig. 82, only one of the field names can include quantity.

A couple of preview examples are shown below:

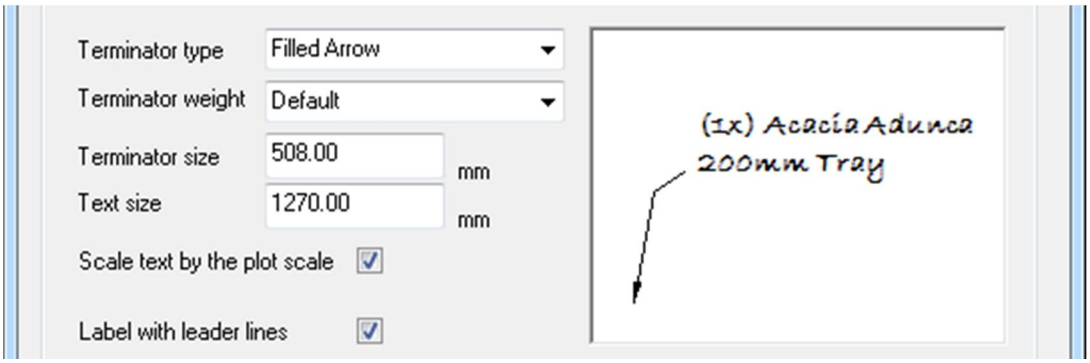



Fig. 92 –Showing botanical name as Label field name, Include Quantity checked

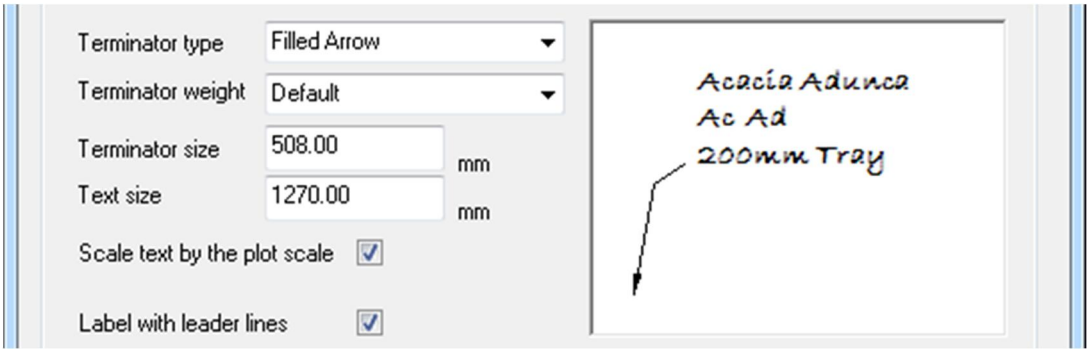
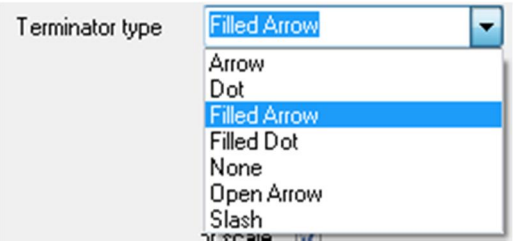



Fig. 93 –Showing botanical name as Label field name abbreviation as Label field name2, Include Quantity unchecked

## Terminator Type

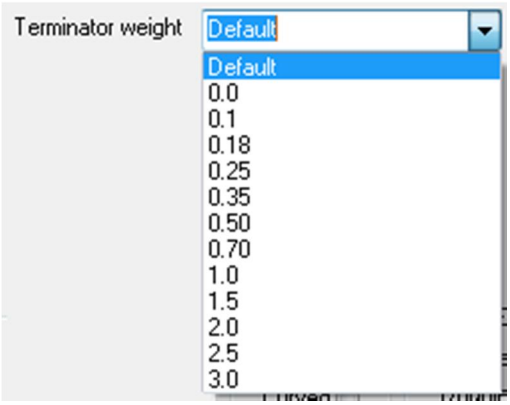



This box lets you choose what type of terminator you want on the end of the leader lines (if you use them). Clicking on the triangle at the end of the box displays a list of the terminator types. There are seven to choose from and they are shown below.

| Terminator Type | Display |
|---|---|
| None | Abutilon Striatum 'Thompson' |
| Arrow | Abutilon Striatum 'Thompson' |
| Open Arrow | Abutilon Striatum 'Thompson' |
| Filled Arrow | Abutilon Striatum 'Thompson' |
| Dot | Abutilon Striatum 'Thompson' |
| Filled Dot | Abutilon Striatum 'Thompson' |
| Slash | Abutilon Striatum 'Thompson' |

Fig. 94 –All different Terminator Types

## Terminator Weight




Leader lines, if used, are drawn with the current line weight. This box lets you choose an alternate weight, or thickness, of the lines that make up the terminator. Clicking on the triangle at the end of the box displays a list of the available weights; they range from 0 to 3.0mm. There is also a "Default" option, which means the terminator lines are drawn with the same weight as the leader lines. The examples shown below have a current line weight of 0.25mm.

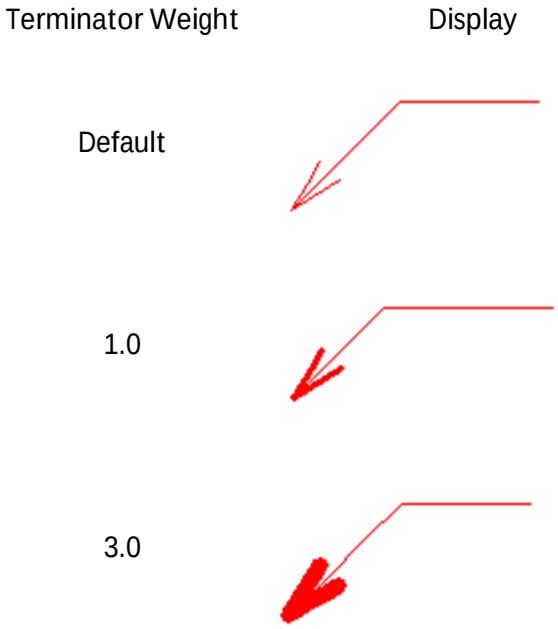



Fig. 95 –Some Terminator Weight examples

## Terminator Size

This box lets you choose the size of the terminator. This is the length of the arrow or slash, or the diameter of the dot.

## Text Size

This box lets you define the size of the label text. Text size is influenced by the next option, Scale Text by the Plot Scale and can work in either of the following two ways

1. If the Scale Text by the Plot Scale option is ticked, then the text size entered is automatically multiplied by the view's Plot Scale and the text is displayed on the screen at that scaled size.

   For example, if a text size of 4mm is entered and the Plot Scale is 100, the text will be displayed on screen at 400mm high.

   This technique lets you define the text size based on the height you want it to be when it is printed on paper. If the Plot Scale is changed for some reason, the on-screen text height will automatically adjust, but, providing you print the drawing at the specified Plot Scale, the text will always print at the height specified.

   For example, a text height of 4mm and a Plot Scale of 100 produces on-screen text at 400mm high. Printing the drawing at a scale of 1:100 will produce text 4mm high on the paper. Change the Plot Scale to 200 and the on-screen text will become 800mm high, but printing the drawing at a scale of 1:200 will still produce text 4mm high on the paper.

2. If the Scale Text by the Plot Scale option is not ticked, then the text size entered is the on-screen height. It is not, in any way, affected by the view's Plot Scale.

   For the text to be visible on the screen, the size must be calculated accordingly.

   This technique will produce printed text of a different size if the Plot Scale is changed.

   For example, if a text height of 400mm is specified and the Plot Scale is 100, the printed text will be 4mm high, but if the Plot Scale is changed to 200, the printed text would be 2mm high.

## Scale Text by the Plot Scale

This check box controls whether the text size entered is automatically multiplied by the view's Plot Scale for on-screen display. Refer to the previous section, Text Size for more details.

## Label with Leader Lines

This check box controls whether leader lines are displayed for the label. The left hand example below shows a label with leader lines; the right hand example shows a label without leader lines.

Fig. 96 –Displaying plant labels with and without leader lines

## Leader Type, Shape and Elbows

Leader Type, Shape and Elbows allow you to highly customize the way the labels will display on your designs.

## Leader Type

This option allows you to label one or more plants using one single leader, or create multiple leaders pointing to one same label.

This option is not available when pre-selecting plants.

Single Leader

Single Leader will display one unique leader per plant or plants previously selected.

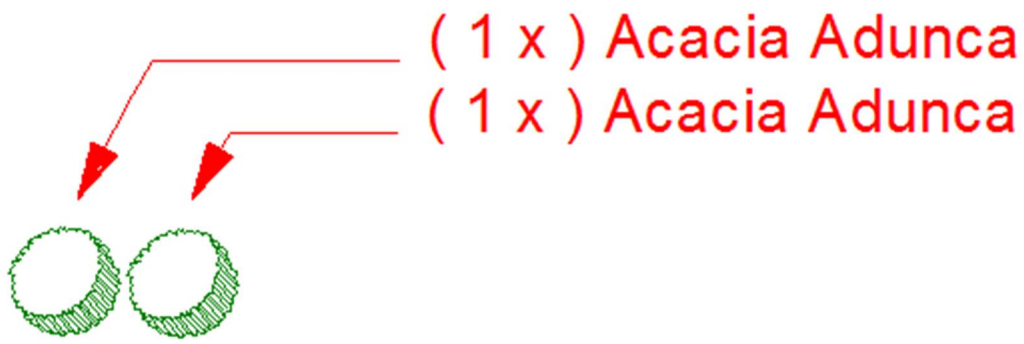



Fig. 97 –Labelling Proposed Plants using Single Leaders

Multiple Leader

Multiple Leader allows inserting of one single label pointing to more than one plant.

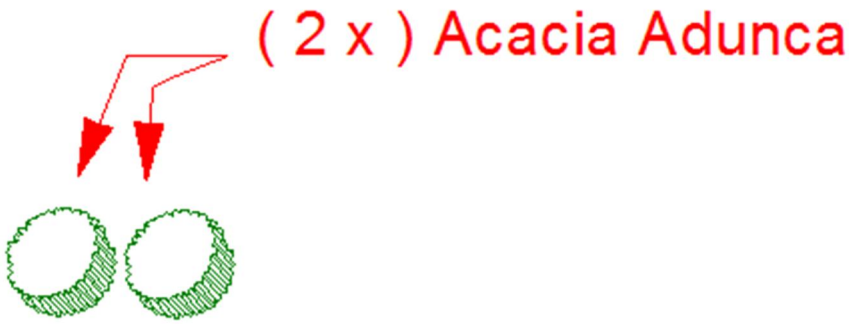



Fig. 98 –Labelling Proposed Plants using Multiple Leaders

## Leader Shape

Leader Shape allows you to draw straight or curved leaders.

### Straight Leader

Straight Leaders are drawn as Curves with a degree of 1 by default so they appear as straight lines. The curve can be modified easily using regular curve commands.

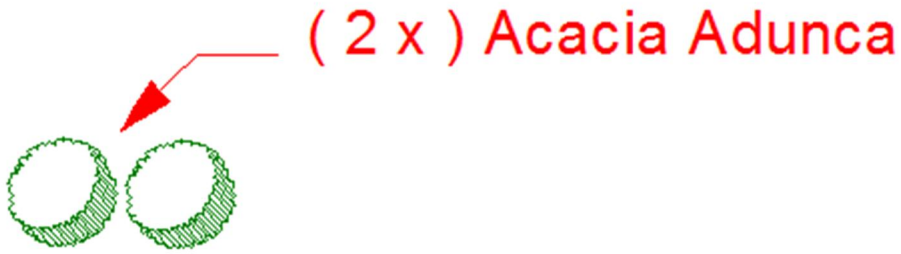



Fig. 99 –Single Straight Leader Example

### Curved Leader

Curved Leaders are drawn as Curves with a degree of 2 by default. The curve can be modified easily using regular curve commands.

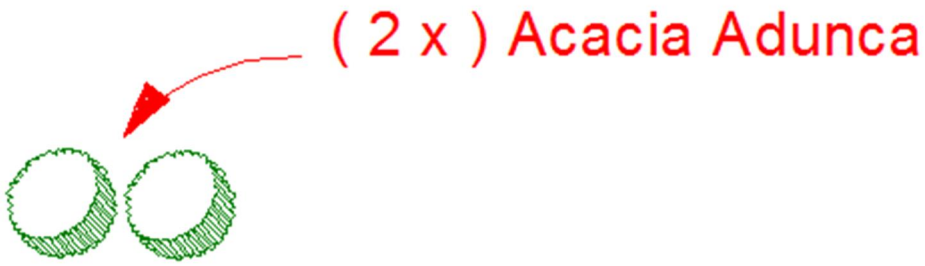



Fig. 100 –Single Curved Leader Example

## Leader Elbows

Leader Elbows allows you to add an additional insertion point to the leaders

Single Elbow

Three mouse clicks are required in order to label the plant.

In the following example we pre-selected two proposed plants and then run the Label Proposed Plants command.

Fig. 101 –Two Pre-selected Proposed Plants

Next, choose Straight as Leader Shape, and Single as Leader Elbows. Note that since we are pre-selecting two plants, the Leader Type options become unavailable.

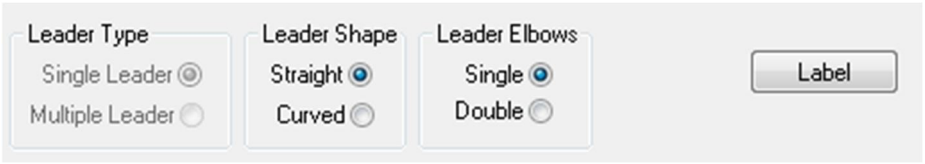



Fig. 102 –Defining the Leader Options

Clicking on Label, LANDWorksCAD will ask to locate the start of the leader.

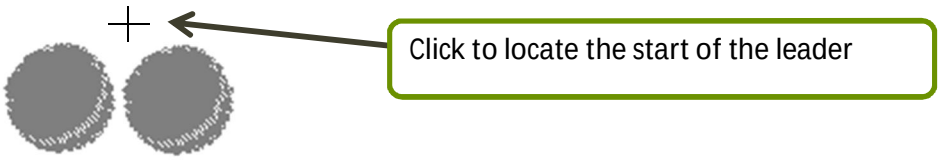



Fig. 103 –Click anywhere close to the plants to locate the start of the leader

Next, click anywhere to locate the first elbow

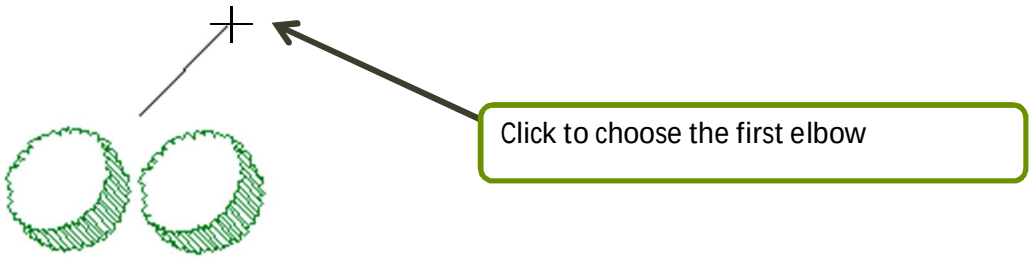



Fig. 104 –Click to select the first elbow

Next select where the text (label) will be placed.

Fig. 105 –Select where the label will be inserted

The label should look as below:

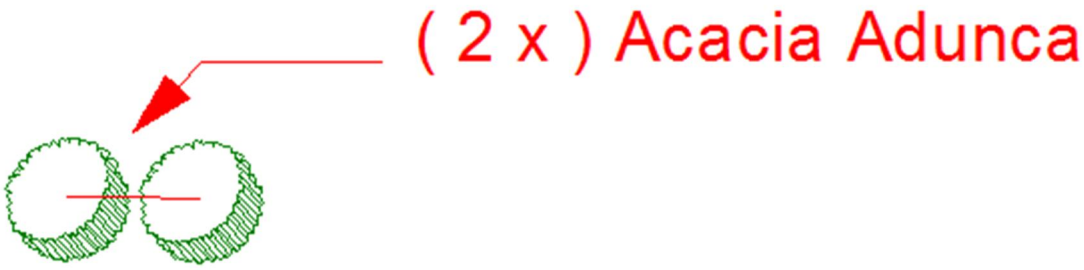



Fig. 106 –Single Straight Leader with Single Elbow inserted

Double Elbow

Four mouse clicks are required in order to label the plant.

In the following example we pre-selected two proposed plants and then run the Label Proposed Plants command.

Clicking on Label, LANDWorksCAD will ask to locate the start of the leader.

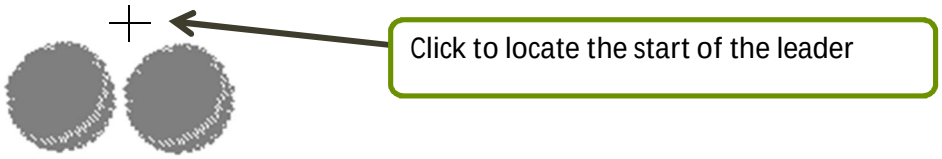



Fig. 107 –Click anywhere close to the plants to locate the start of the leader

Next, click anywhere to locate the first elbow

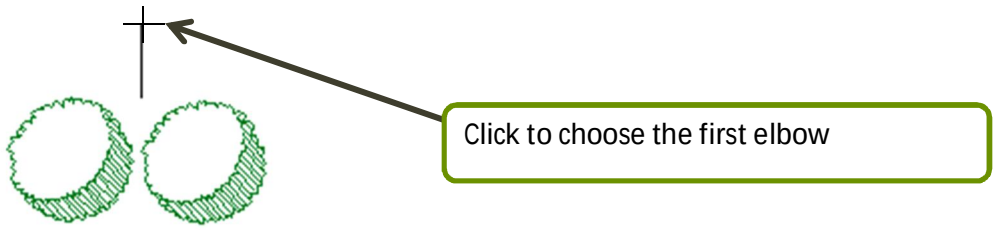



Fig. 108 –Click to select the first elbow

Click to locate the second elbow

Fig. 109 –Click to choose the second elbow

Next select where the text (label) will be placed.

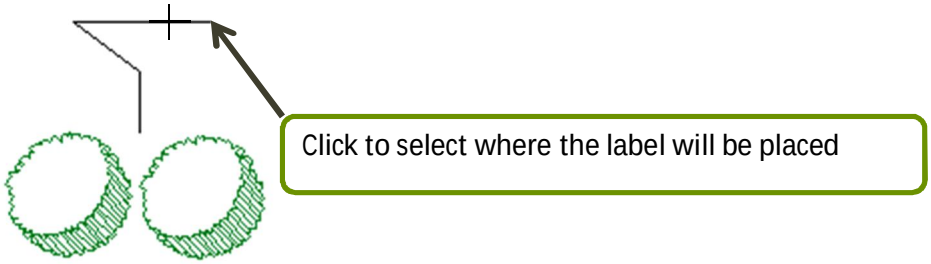



Fig. 110 –Select where the label will be inserted

The label should look as below:

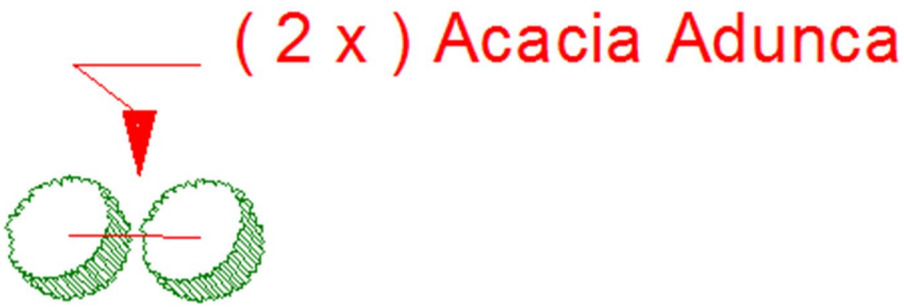



Fig. 111 –Single Straight Leader with Double Elbow inserted

## Notes

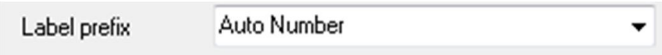
Combining the different options available for Manual Labelling gives you great flexibility to customize you designs.

Note that Multiple Leaders are only available if no plant is pre-selected. I.e., the command is selected first and then the plants one by one.

## Auto Label Options

Auto Labelling allows you to quickly label all your Proposed Plants in the drawing with just one single click according to uniqueness of Species.

### Label Prefix




This shows the prefix that will be inserted when auto labelling the Proposed Plants. It is possible to choose another field from the dropdown list.

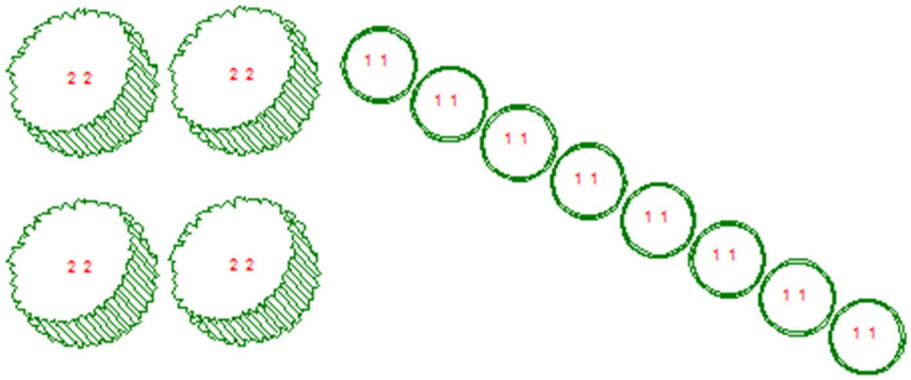



Fig. 112 –Auto Labelling using Auto Number as Label Prefix Example

### Label Suffix

Label suffix allows inserting additional information to the label, such as the abbreviation, botanical name...

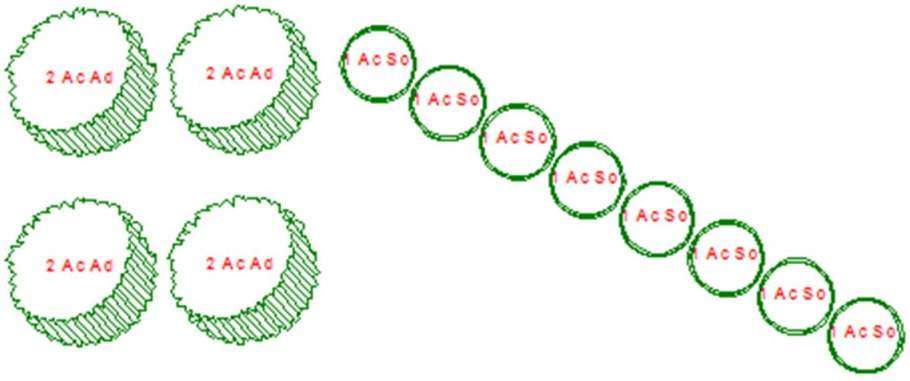



Fig. 113 –Auto Labelling using Auto Number as Label Prefix and Abbreviation as Label Suffix

## Text Size

This box lets you define the size of the label text. Text size is influenced by the next option, Scale Text by the Plot Scale and can work in either of the following two ways

1. If the Scale Text by the Plot Scale option is ticked, then the text size entered is automatically multiplied by the view's Plot Scale and the text is displayed on the screen at that scaled size.

   For example, if a text size of 4mm is entered and the Plot Scale is 100, the text will be displayed on screen at 400mm high.

   This technique lets you define the text size based on the height you want it to be when it is printed on paper. If the Plot Scale is changed for some reason, the on-screen text height will automatically adjust, but, providing you print the drawing at the specified Plot Scale, the text will always print at the height specified.

   For example, a text height of 4mm and a Plot Scale of 100 produces on-screen text at 400mm high. Printing the drawing at a scale of 1:100 will produce text 4mm high on the paper. Change the Plot Scale to 200 and the on-screen text will become 800mm high, but printing the drawing at a scale of 1:200 will still produce text 4mm high on the paper.

2. If the Scale Text by the Plot Scale option is not ticked, then the text size entered is the on-screen height. It is not, in any way, affected by the view's Plot Scale.

   For the text to be visible on the screen, the size must be calculated accordingly.

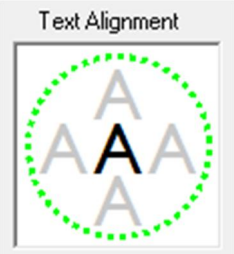
   This technique will produce printed text of a different size if the Plot Scale is changed.

   For example, if a text height of 400mm is specified and the Plot Scale is 100, the printed text will be 4mm high, but if the Plot Scale is changed to 200, the printed text would be 2mm high.

## Scale Text by the Plot Scale

This check box controls whether the text size entered is automatically multiplied by the view's Plot Scale for on-screen display. Refer to the previous section, Text Size for more details.

## Text Alignment




Text Alignment allows you to determine the position for the auto labels (centred, top, left, right or bottom).

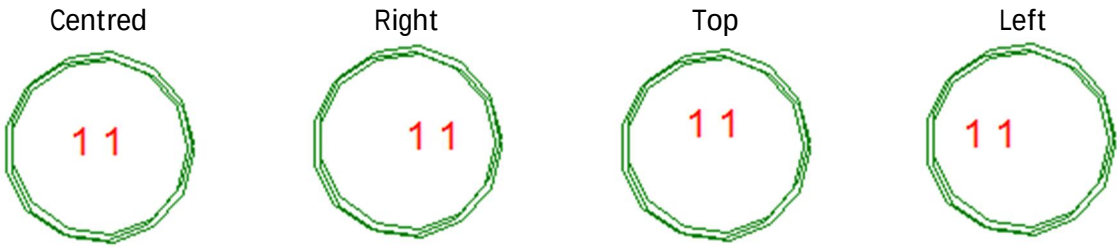



Fig. 114 –Several Examples on how the Text is aligned when Auto Labelling

# Plant Schedules

| | |
|---|---|
| Existing Plant Schedule | ✓ |
| Proposed Plant Schedule | ✓ |

LANDWorksCAD allows you to create two types of plant schedule or legends: Existing and Proposed.

## Existing Plant Schedule

The Existing Plant Schedule command automatically generates a schedule of existing plants based on the criteria entered using the Label Existing Plant command.

### Note

For an existing plant figure to be included in the Existing Plant Schedule it MUST be labelled with Label Existing Plant command first.

When the command is selected, the following dialog box is displayed:

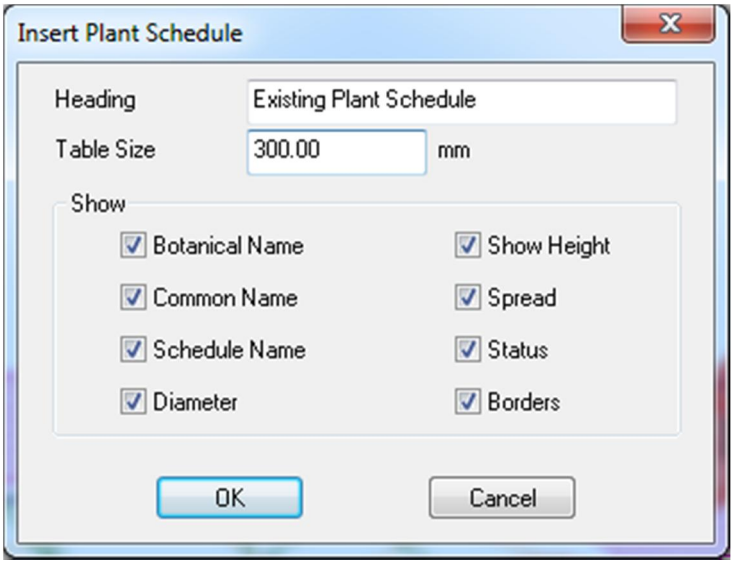



Fig. 115 –Insert Plant Schedule Dialog Box

### Heading

Text typed in this box will be displayed at the top of the Schedule as a heading. If you do not want a heading leave this box blank

### Table Size

This box controls the height of each row in the Schedule. It should be adjusted to suit the scale of the drawing you are creating.

A simple "rule of thumb" to determine a suitable size for the table is as follows:

1. Decide how high you want the Legend text to be when printed, e.g., 4mm
2. Add 2mm, to allow a 1mm space above and below the text, → 6mm
3. Multiply that number by the Plot Scale, e.g., a Plot Scale of 200 gives 1200
4. Use this final number as the "Table Size"

### Botanical Name

If this box is ticked the botanical name, as selected in the Label Existing Plant command, will be included in the Schedule.

### Common Name

If this box is ticked the common name, as selected in the Label Existing Plant command, will be included in the Schedule.

### Schedule Name

If this box is ticked the schedule name of the plants, as entered in the Label Existing Plant command, will be included in the Schedule.

### Diameter

If this box is ticked the trunk diameter of the plants, as entered in the Label Existing Plant command, will be included in the Schedule.

### Height

If this box is ticked the height of the plants, as entered in the Label Existing Plant command, will be included in the Schedule.

### Spread

If this box is ticked the spread of the plants, as entered in the Label Existing Plant command, will be included in the Schedule.

## Status

If this box is ticked the Status 1, Status 2 and Comments text, as entered in the Label Existing Plant command, will be included in the Schedule.

## Borders

If this box is ticked, border lines will be generated for the Legend.

With Border Lines

Existing Tree Schedule

| No | Species | Name |
|---|---|---|
| T1 | Abies Grandis | Ab Gr |
| T2 | Abies Grandis | Ab Gr |
| T3 | Abies Grandis | Ab Gr |
| Sh4 | Schoenoplectus Mucronatus | Sc Mu |
| Sh5 | Schoenoplectus Mucronatus | Sc Mu |
| Sh6 | Schoenoplectus Mucronatus | Sc Mu |
| Sh7 | Schoenoplectus Mucronatus | Sc Mu |

Without Border Lines

Existing Tree Schedule

| No | Species | Name |
|---|---|---|
| T1 | Abies Grandis | Ab Gr |
| T2 | Abies Grandis | Ab Gr |
| T3 | Abies Grandis | Ab Gr |
| Sh4 | Schoenoplectus Mucronatus | Sc Mu |
| Sh5 | Schoenoplectus Mucronatus | Sc Mu |
| Sh6 | Schoenoplectus Mucronatus | Sc Mu |
| Sh7 | Schoenoplectus Mucronatus | Sc Mu |

Fig. 116 –Existing Plant Schedule examples with and without borders

## Inserting the Schedule

When the OK button is clicked, you are prompted to "Locate the position of the tree schedule". This is the top, left corner of the Schedule. A single click will generate the Schedule.

A sample Schedule is shown below.

Existing Tree Schedule

| No | Species | Name | Trunk Diam | Height | Spread | Status | Status 2 | Comments |
|---|---|---|---|---|---|---|---|---|
| T1 | Abies Grandis | Ab Gr | 300mm | 4000mm | 1000mm | | | |
| T2 | Abies Grandis | Ab Gr | 300mm | 4000mm | 1000mm | | | |
| T3 | Abies Grandis | Ab Gr | 300mm | 4000mm | 1000mm | | | |
| Sh4 | Schoenoplectus Mucronatus | Sc Mu | 300mm | 4000mm | 500mm | | | |
| Sh5 | Schoenoplectus Mucronatus | Sc Mu | 300mm | 4000mm | 500mm | | | |
| Sh6 | Schoenoplectus Mucronatus | Sc Mu | 300mm | 4000mm | 500mm | | | |
| Sh7 | Schoenoplectus Mucronatus | Sc Mu | 300mm | 4000mm | 500mm | | | |

Fig. 117 –Existing Plant Schedule example

## Notes

By design, the Schedule does not automatically update if you add or delete plant labels after inserting them. To update the Schedule simply run this command again (it will remember how you set it up last time) and click the top, left corner of it.

You can, of course, click somewhere else if you want to re-position the Schedule.

You do not need to delete the existing Schedule before updating it.

## Proposed Plant Legend

The Proposed Plant Legend command automatically generates a Legend of all the proposed plants that have been inserted in the drawing.

When the command is selected, the following dialog box is displayed.

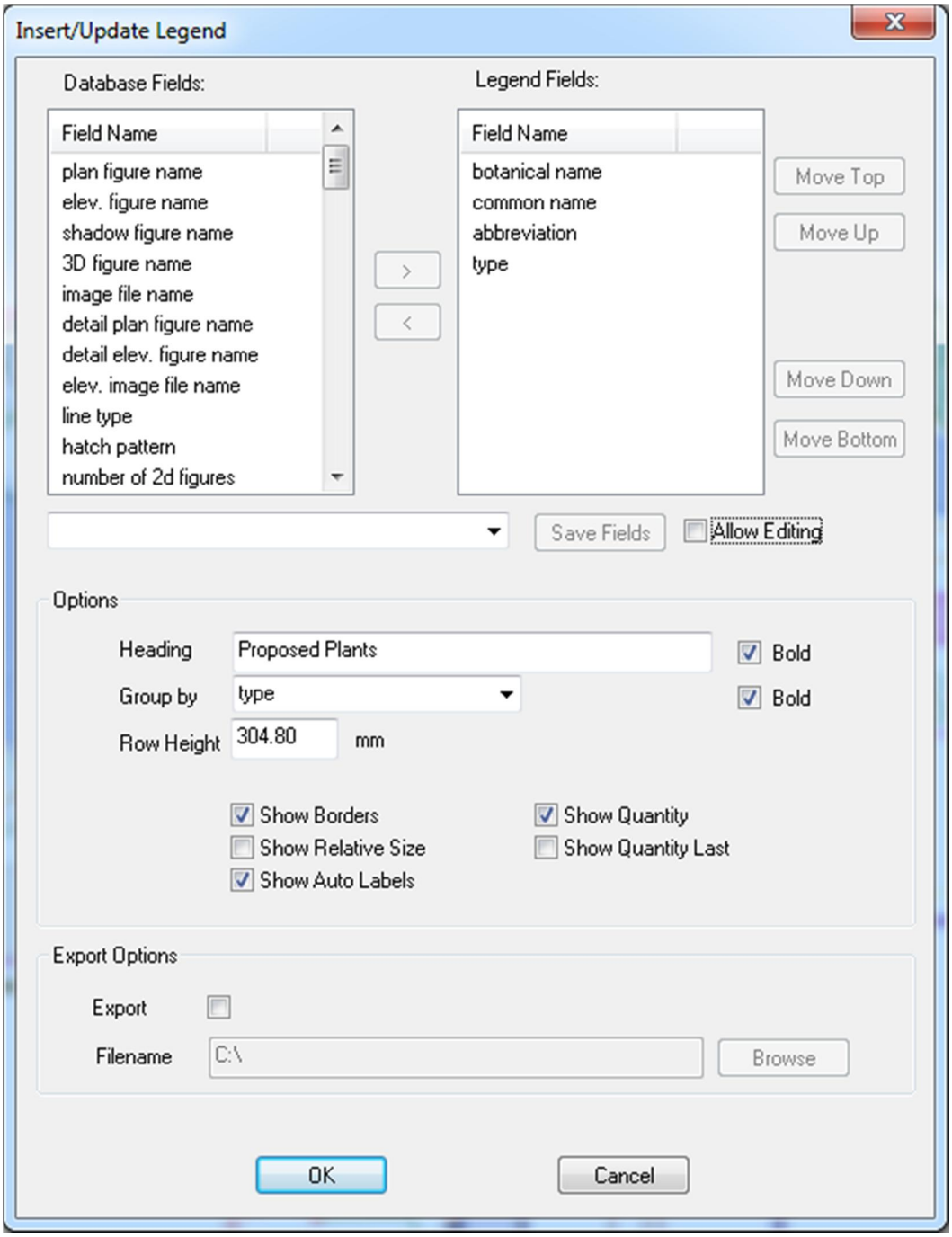



Fig. 118 –Proposed Plant Legend (Schedule) Dialog Box

### Database Fields

This part of the dialog box lists all the column fields on the Proposed Plant database.

### Legend Fields

This part of the dialog box lists the column fields to be inserted in the Proposed Plant Schedule.

### Allow Editing

The Allow Editing checkbox when checked allows you to make changes to the Legend Fields to be displayed when inserting the Proposed Plant Schedule.

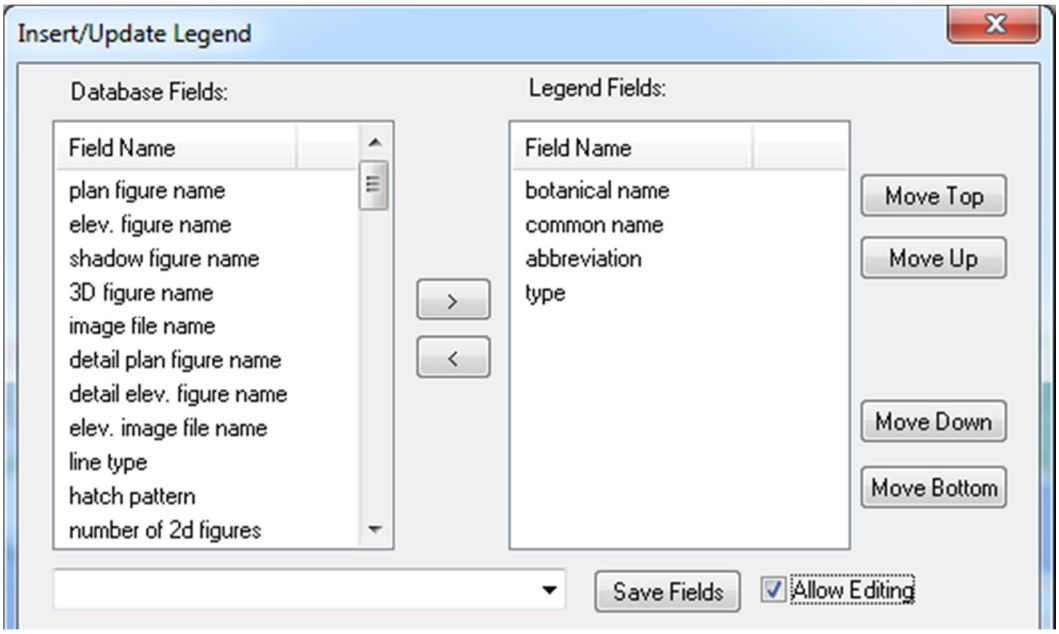



Fig. 119 –Editing the Fields to be displayed on the Proposed Plant Schedule

The following operations can be made when editing the Legend Fields.

## Adding Legend Fields

To add Database Fields to the Legend Fields to display when inserting the Proposed Plant Schedule, select your desired Database Fields and then click the [ > ] button to add it to the list.

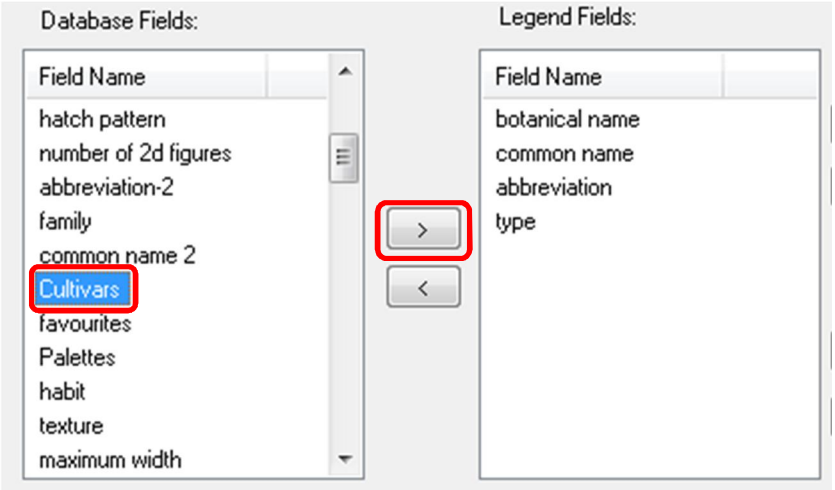



Fig. 120 –Selecting Cultivars from the Database Fields

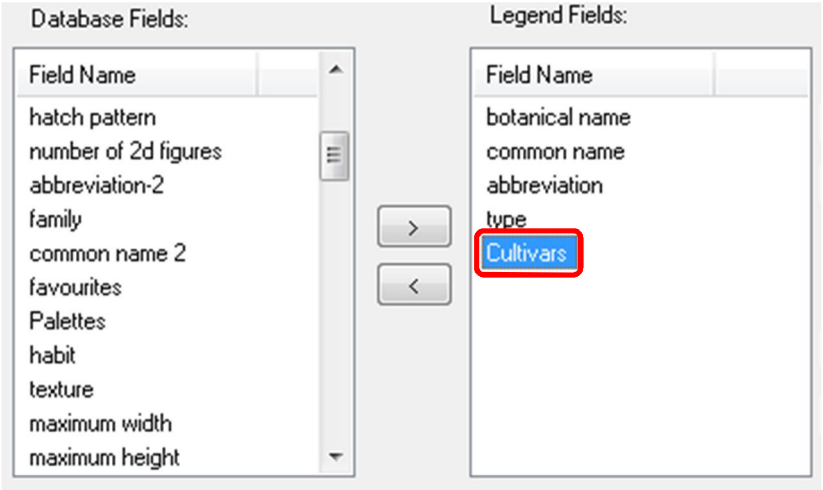



Fig. 121 –Cultivars added to the Legend Fields

## Removing Legend Fields

To remove Legend Fields, select the field you wish not to show on the Proposed Plant Schedule and then click the [ < ] button to delete it from the list.

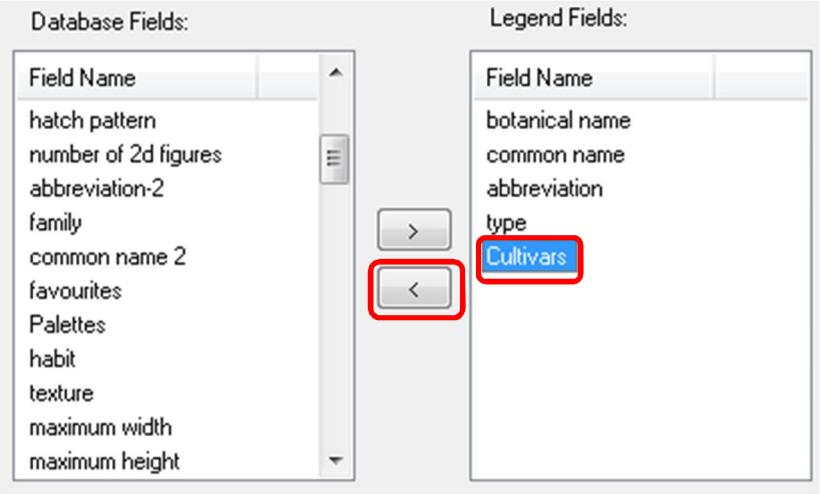



Fig. 122 –Selecting Cultivars from the Legend Fields

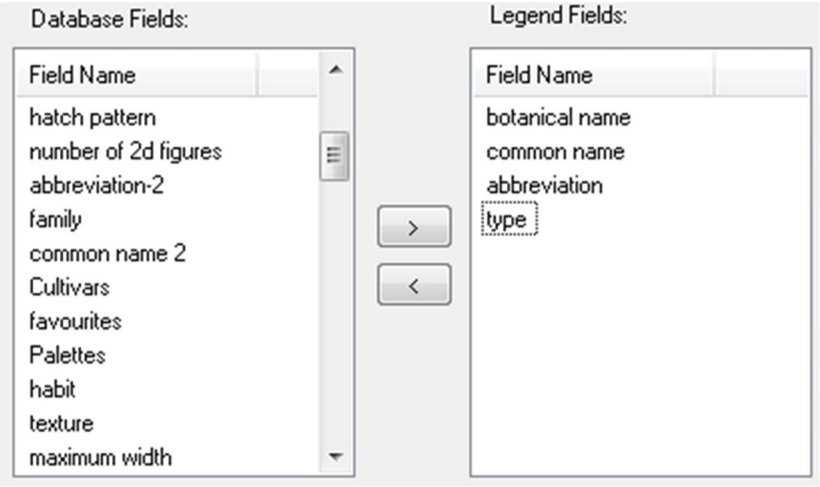



Fig. 123 –Cultivars removed from the Legend Fields

## Re-Arranging Legend Fields

Using the Move Top, Move Up, Move Down and Move Bottom buttons it is possible to re-arrange the fields shown on the Legend Fields area.

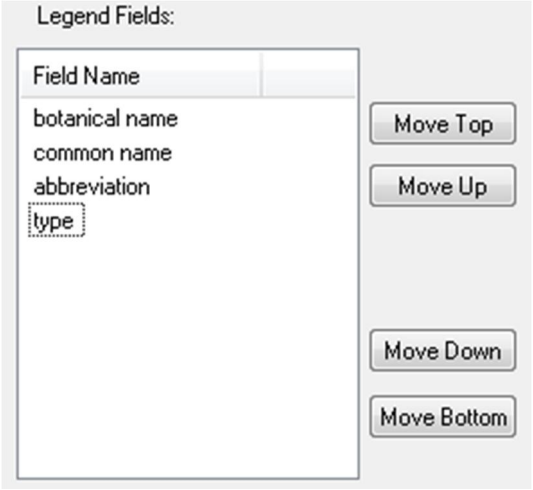



Fig. 124 –Re-Arrange buttons for Legend Fields

To move the fields up, down, top or bottom, first select your desired field within the Legend Fields, click on the appropriate button.

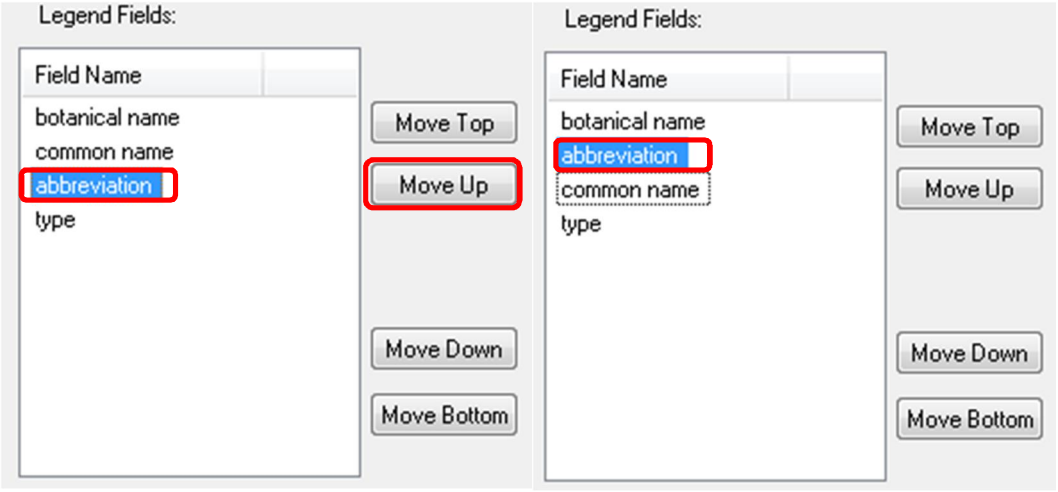



Fig. 125 –Example re-arranging the abbreviation field (Move Up)

- Move Top – moves the selected field to the top of the list
- Move Up – moves the selected field one field up within the list
- Move Down – moves the selected field one field down within the list
- Move Bottom – moves the selected field to the bottom of the list

The order they appear hear affects the order they appear in the schedule itself.

## Creating Lists of Fields

It is possible to create lists of fields to display several Proposed Plant Schedules, or use different ones for different types of drawings.

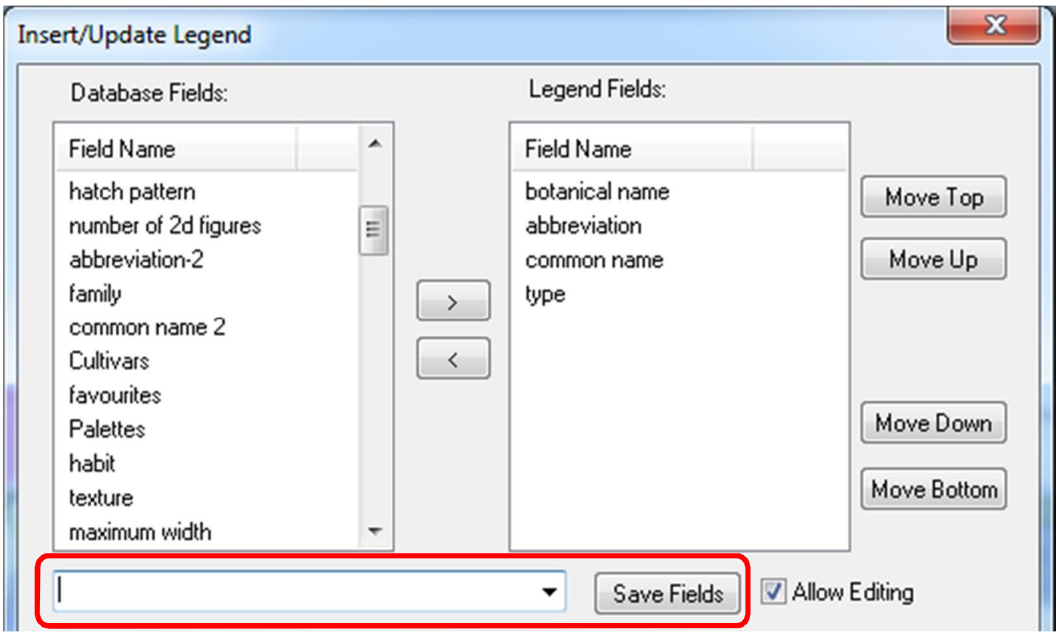



Fig. 126 –Save Legend Fields on different lists to create your own Schedule styles

Typing a name on the dropdown list and clicking on the Save Fields button will add that Legend Fields combination into a new list or group of fields.

In this example, we will name the list 'My Schedule 1' and click the Save Fields button.

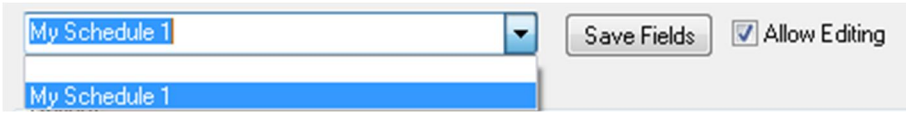



Fig. 127 –My Schedule 1 Example list saved

Selecting the empty value will clear the Legend Fields' list.

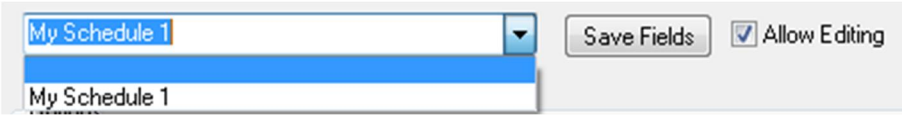



Fig. 128 –Clearing the Legend Fields' List

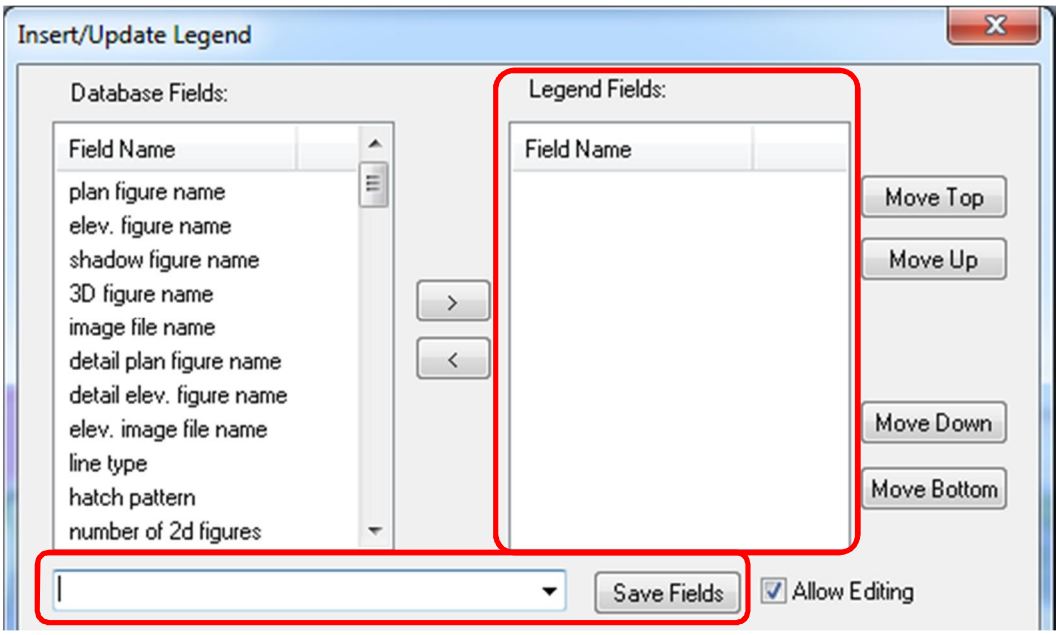



Fig. 129 –Clearing the Legend Fields' List

This feature is especially useful when different plant information. You may save several field lists for ease of use.

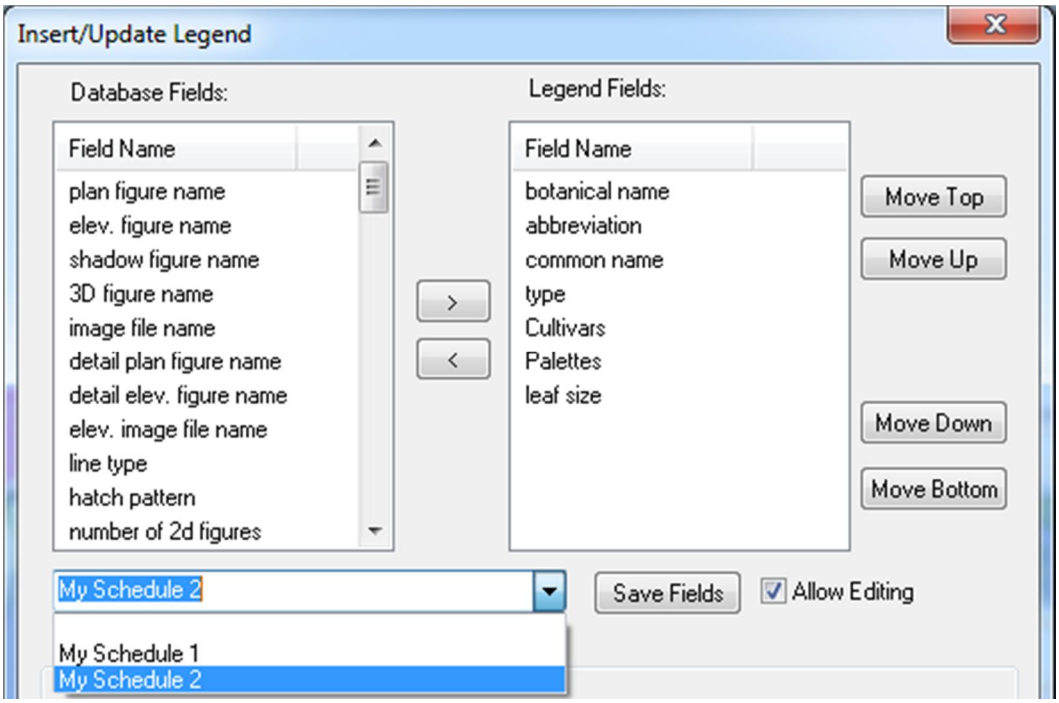



Fig. 130 –Another Legend Fields' List example

## Options

Under the Options section the following settings can be customized.

### Heading

Text typed in this box will be displayed at the top of the Legend as a heading. If you do not want a heading leave this box blank.

Check the Bold option if you want to display the Heading in bold letters.

### Group By

The plants in the Legend can be grouped by any of the field names. For example, if the plants were grouped by Type, all the *shrubs* would be listed together under a sub-heading of "*Shrub*"; all the *trees* would be listed together under a sub-heading of "*Tree*", etc. Any field name can be used to group the plants.

Check the Bold option if you want to display the Heading in bold letters.

The example below shows the plants grouped by Type.

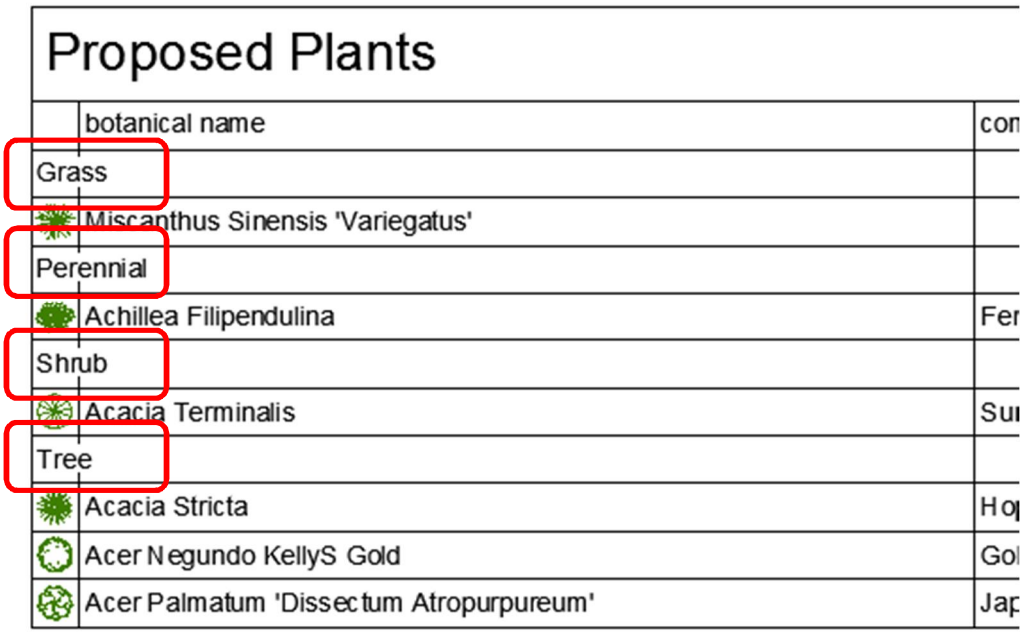



Fig. 131 –Example of Proposed Plant Schedule Grouped by Type

## Row Height

This box controls the height of each row in the Legend. It should be adjusted to suit the scale of the drawing you are creating.

A simple "rule of thumb" to determine a suitable size for the table is as follows:

1. Decide how high you want the Legend text to be when printed, eg, 4mm
2. Add 2mm, to allow a 1mm space above and below the text, → 6mm
3. Multiply that number by the Plot Scale, eg, a Plot Scale of 200 gives 1200
4. Use this final number as the "Table Size"

## Show Borders

If this box is ticked, border lines will be generated for the Legend.

With Border Lines

Without Border Lines

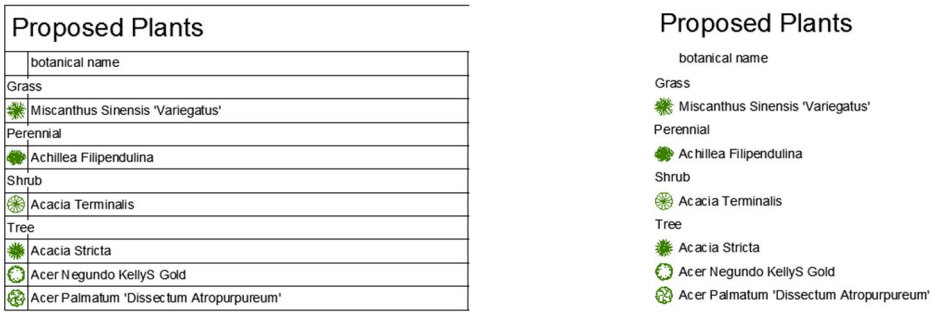



Fig. 132 –Proposed Plant Schedules with and without borders

## Show Relative Size

The Legend displays a plan figure for each plant and, by default, automatically scales the figures to fit into the given row height so they are all the same size. If this box is ticked, however, the figures are scaled in size relative to each other.

Not Ticked

Ticked

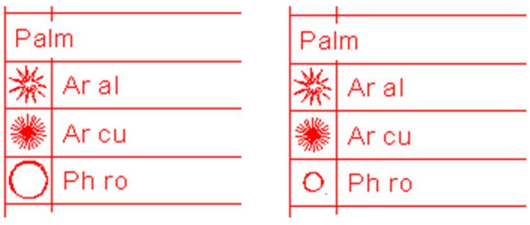



Fig. 133 –Show Relative Size checked. Note the difference in size of the "Ph ro".

## Tip

If you insert a Legend with this option ticked and some of the plan figures don't appear, it is most likely because those plants are much smaller on the drawing than the other plants and so are tiny when inserted into the Legend. They are there; they're just so small you can't see them.

### Show Auto Labels

If the Proposed Plants were automatically labelled, this checkbox enabled will show the auto labels.

### Show Quantity

If this box is ticked, the second column in the Legend will show the quantity of each plant, i.e., LANDWorksCAD will count your plants for you!

### Show Quantity Last

If this box is ticked, the quantity figures will be in the last column of the Legend, not the second.

### Inserting the Legend

When the OK button is clicked, you are prompted to "Locate the position of the legend". This is the top, left corner of the Legend. A single click will generate the Legend.

A sample Legend is shown below.

**Proposed Plants**

| | botanical name | common name | Qty |
|---|---|---|---|
| Grass | | | |
| | Miscanthus Sinensis 'Variegatus' | | 6 |
| Perennial | | | |
| | Achillea Filipendulina | Fernleaf Yarrow | 3 |
| Shrub | | | |
| | Acacia Terminalis | Sunshine Wattle | 5 |
| Tree | | | |
| | Acacia Stricta | Hop Wattle | 3 |
| | Acer Negundo KellyS Gold | Golden Box elder | 4 |
| | Acer Palmatum 'Dissectum Atropurpureum' | Japanese Maple Threadleaf | 8 |

Fig. 134 –Show Relative Size checked. Note the difference in size of the "Ph ro".

## Note

By design, the Legend does not automatically update if you add or delete plants after inserting it. To update the Legend simply run this command again (it will remember how you set it up last time) and snap to the top, left corner of it.

You can, of course, click somewhere else if you want to re-position the Legend.

You do not need to delete the existing Legend before updating it.

## Note

The Legend is made up of lines and text and can be edited manually very easily after it has been inserted. Be aware, though, that any edits will be lost if you insert a new Legend.

## Export Options

Export Options allows exporting the Proposed Plant Schedule to an Excel file.

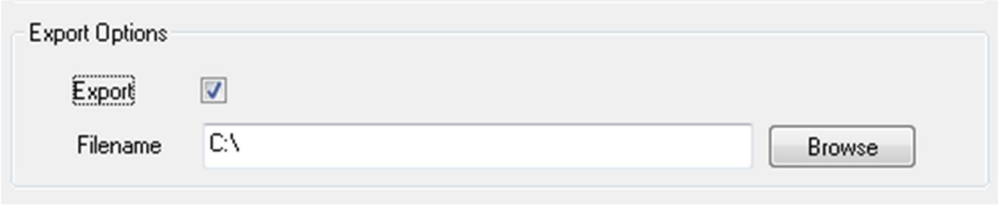



Fig. 135 – Export Options for Proposed Plant Schedule

First, check the Export option then click on Browse to specify the folder destination.

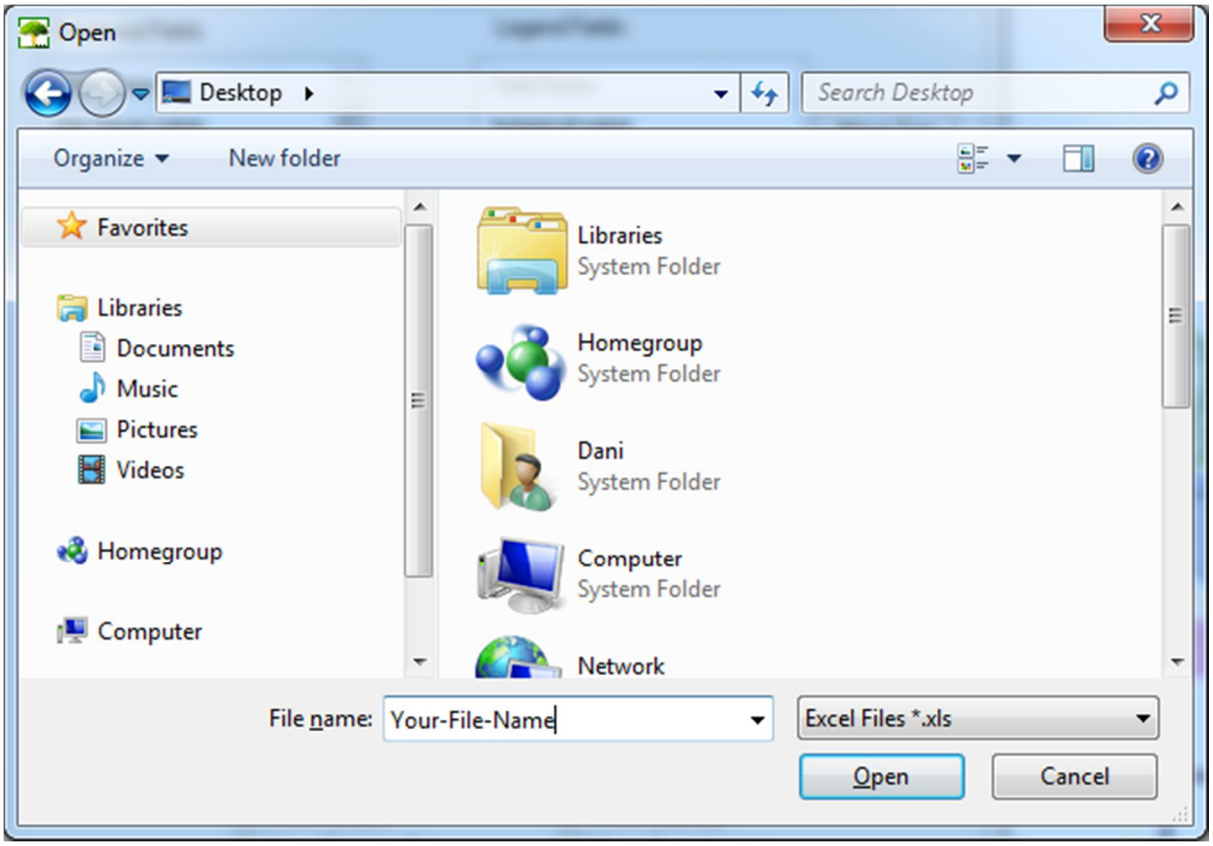



Fig. 136 – Browse and select a folder destination. Don't forget to type a valid filename.

Type a filename and click on Open.

Once you generate the Proposed Plant Schedule it will create an Excel file containing the same information. You can typically use this in reports or to send to suppliers for costing.

# Plant Display Switching

Plant Display Switching

Plant Display Switching displays the plants as basic or detailed figures or as bitmap images, regardless of how they were initially inserted, and/or add or hides shadows for the plants.

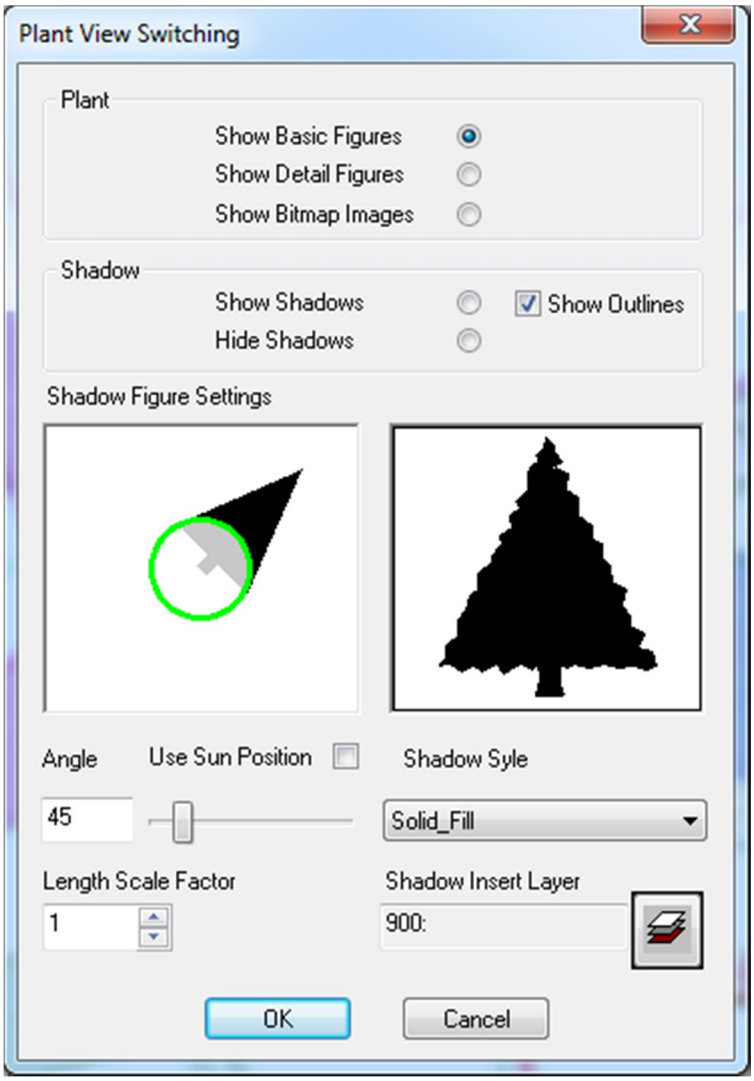



Fig. 137 – Plant Display Switching dialog box

It is possible to change the plant view or show / hide shadows on previously selected plants or, if no plant has been previously selected, it will switch the display or add / hide shadows for all plants in the drawing.

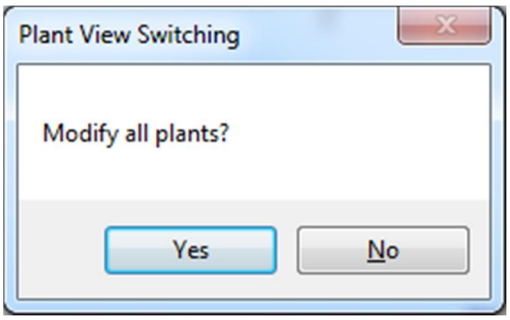
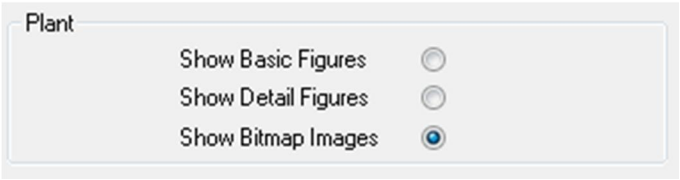



Fig. 138 – Confirmation message when switching plant views and no plant was previously selected

## Plant




This section allows you to switch the view to basic figures, detailed figures (Proposed Plants only) or bitmap images. Just select your desired option and click OK.

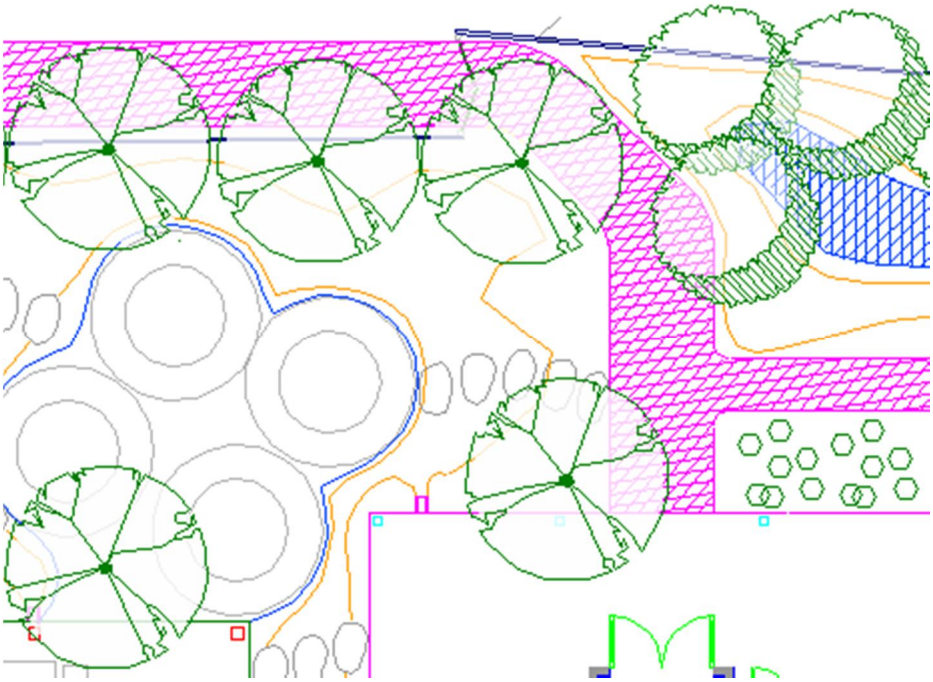


Fig. 139 – Proposed Plants shown as basic figures

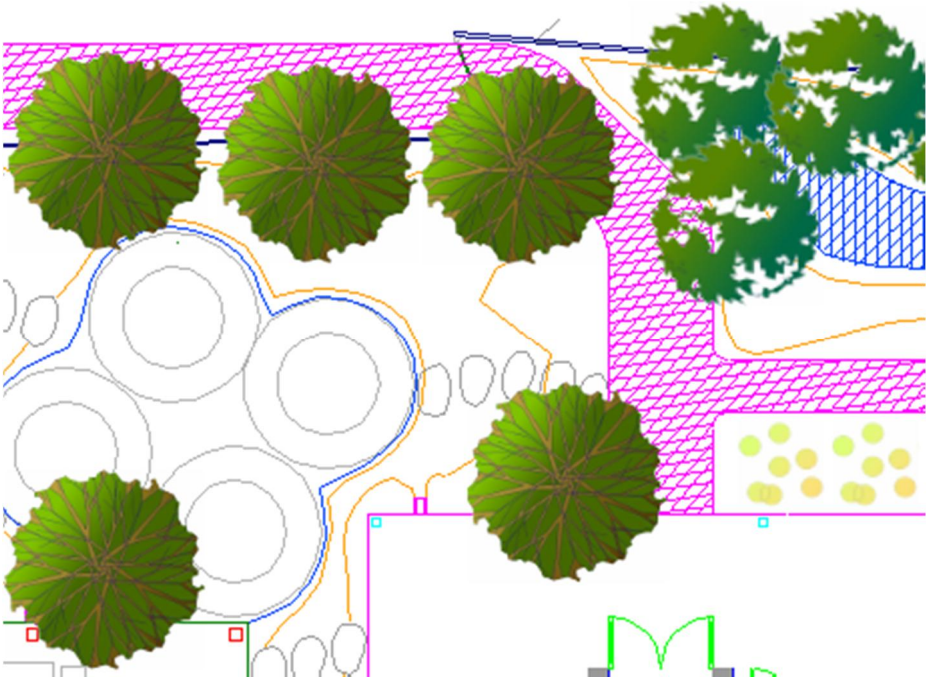
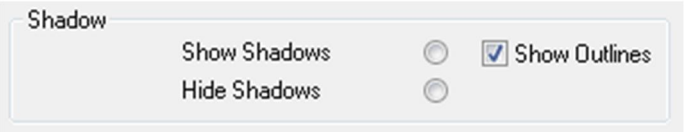


Fig. 140 – Proposed Plants switched to bitmap images

## Shadows




This section allows you to show or hide shadows on plants that have a shadow figure applied. Please read the following section for more details.

The Show Outlines checkbox will add boundary curves to the shadow.

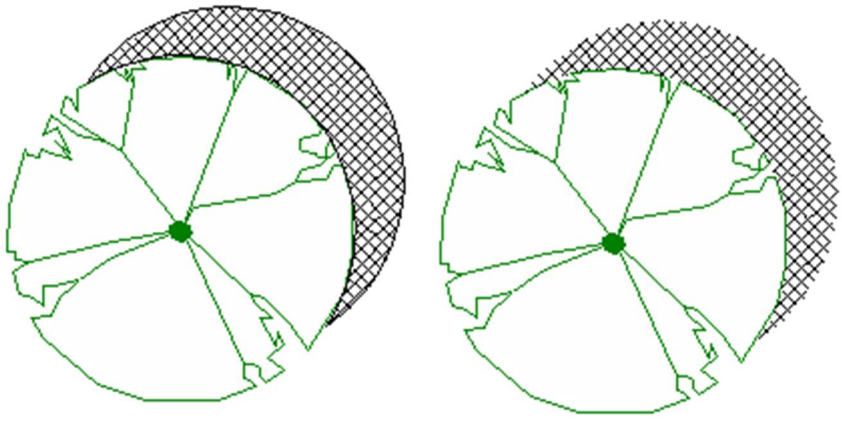
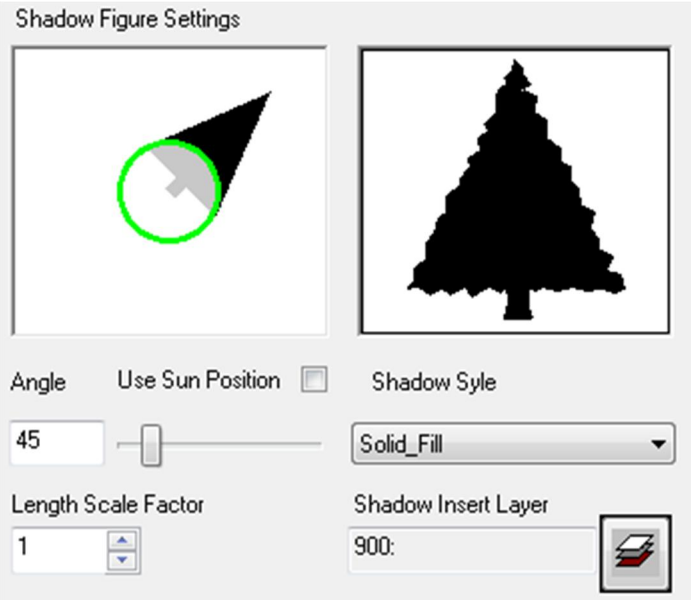


Fig. 141 – Shadow showing outlines (left) and not showing outlines (right)

## Shadow Figure Settings




Shadow Figure Settings control how the shadow will display on your drawings.

### Angle

Determines the angle in which the shadows are inserted (degrees). It is possible to enter a value, drag the horizontal bar from left to right or vice versa or drag on the left image.

### Use Sun Position

If a Sun Light has been inserted into the plan, selecting this option will add the shadows accordingly.

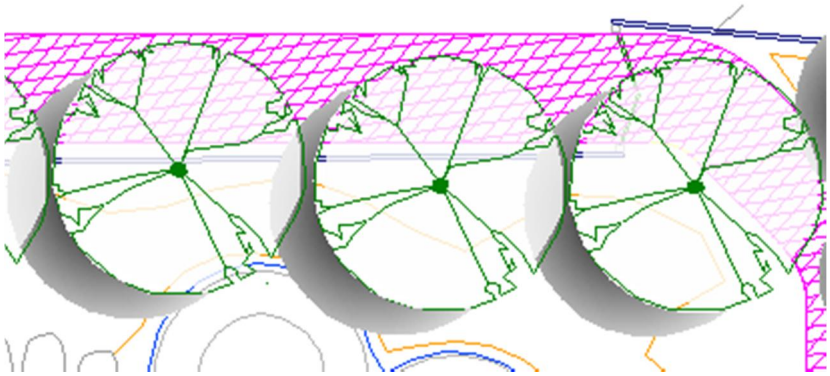


Fig. 142 – Gradient Fill Shadow Applied with 1 as Length Scale Factor

### Length Scale Factor

Length Scale Factor stretches or shrinks the shadow (casting more or less shadow to the plants). It is possible to enter a value directly or use the up and down arrows to increase or decrease by 0.1 increments.

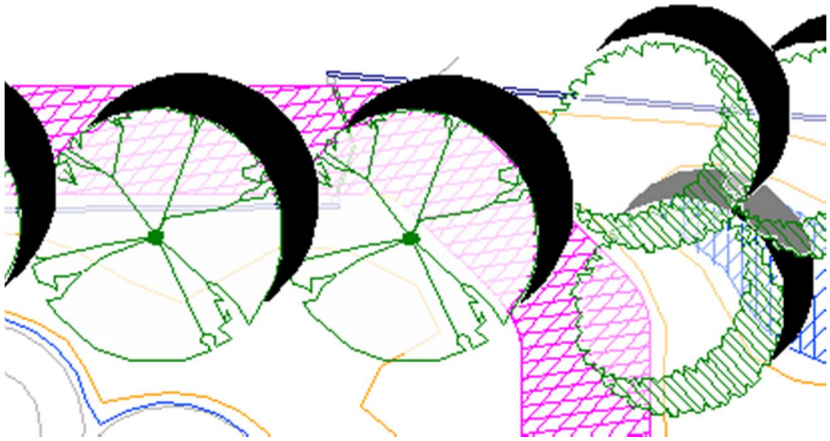


Fig. 143 – Solid Fill Shadow Applied with 1 as Length Scale Factor

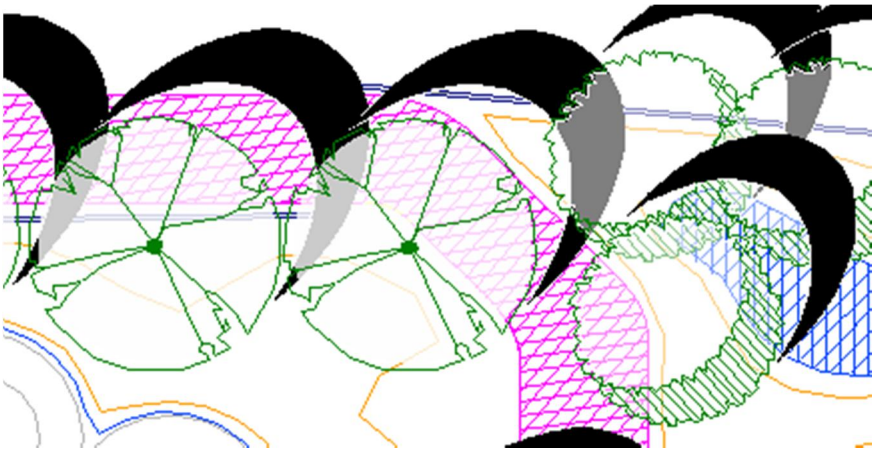
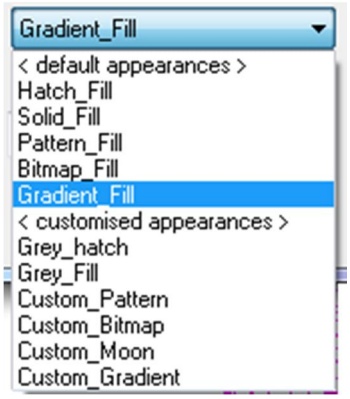


Fig. 144 – Solid Fill Shadow Applied with 1.5 as Length Scale Factor

**Note**

If a drawing contains many plants, changing their display to bitmap images or showing shadows can take a while on some computers and subsequent repaints may be slow. It is suggested that plants be displayed as bitmap images and / or shadows only when necessary, e.g., for printing or when presenting to clients.

## Shadow Style




LANDWorksCAD includes a set of default and customized shadow styles.

It is possible to use hatching, solid, pattern, bitmap and gradient default fills and any other customized appearances. For more information refer to Appendix 5 – Managing Shadows

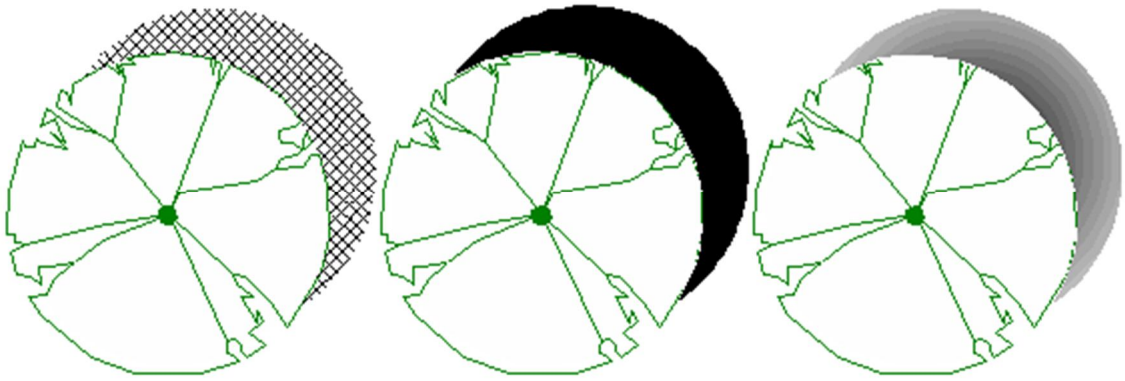


Fig. 145 – Hatch Fill, Solid Fill and Gradient Fill Shadows examples

## Shadow Insert Layer

Shadow Insert Layer determines on which layer the shadows will be positioned.

Clicking on the layers button will allow you to select your desired layer.

# Tally

Tally

Tally extracts data from the drawing for estimating and quoting. The extracted data is:

- the number of plants
- the lengths of linear entities (lines, arcs, circle and curves)
- areas of planes
- Sub-totals and totals for the above

When the command is selected, the data is written to a temporary file called “quantities.txt”, which is immediately displayed in Notepad.

**Note**

Quantities.txt is a temporary file. The same name is used every time the command is run and therefore previous data is overwritten. If you want to save the data in quantities.txt you must select File → Save As and save the file to another location or name for later use.

Once saved, being a standard “txt” file it can be opened in any text editor or even Excel or Word.

**Tip**

named” layers are counted and measured. Entities on layers that have not been named are ignored.

Only entities that are currently visible on screen at the time of running the command are counted and measured. This lets you be selective about what information is extracted, e.g., if only hardscape related layers are turned on, only hardscape data will be extracted.

The data below is an example of the sort of data that is extracted by the Tally command. For ease of reading, the data has been colour coded, as follows:

- Red text is the layer name.
- Black text shows the length of linear entities.
- Blue text shows the areas of planes.
- Green text shows the plants and their quantities.

This colour coding does not occur in the quantities.txt file; all text is black. Some notes have been added to suggest possible sources of the data.

Decking

2 x 4.000m

1 x 16.000m2

Total length for Decking 8.000m
Total area for Decking 16.000m2

Two lengths of deck edging perhaps

Area of decking

Gardens

1 x 28.447m

Length of garden edging

Acacia sowdenii (Western Myall) 5
Acer rubrum (Red Maple) 5
Anigozanthos manglesii (Mangles Kangaroo Paw) 6
Asplenium nidus (Birds Nest Fern) 4

Total length for Gardens 28.447m
Total plants for Gardens 20

Mulch

1 x 153.201m2

Multiply by the depth and you've got the volume of mulch required

Total area for Mulch 153.201m2

Paving

2 x 6.000m
2 x 1.500m

1 x 9.000m2

Total length for Paving 15.000m
Total area for Paving 9.000m2

Total length 51.447m
Total area 178.201m
Total plants 20

Fig. 146 – Tally Report Example

# Insert Grid Lines

Insert Grid Lines

Insert Grid Lines draws a construction grid on the drawing, with row and column labels.

When the command is selected, the following dialog box is displayed.

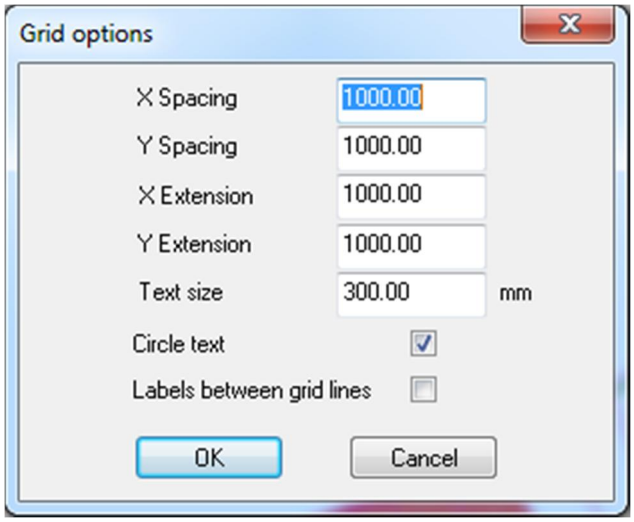



Fig. 147 – Insert Grid Lines dialog box

The image and text below explain the options in this dialog box.

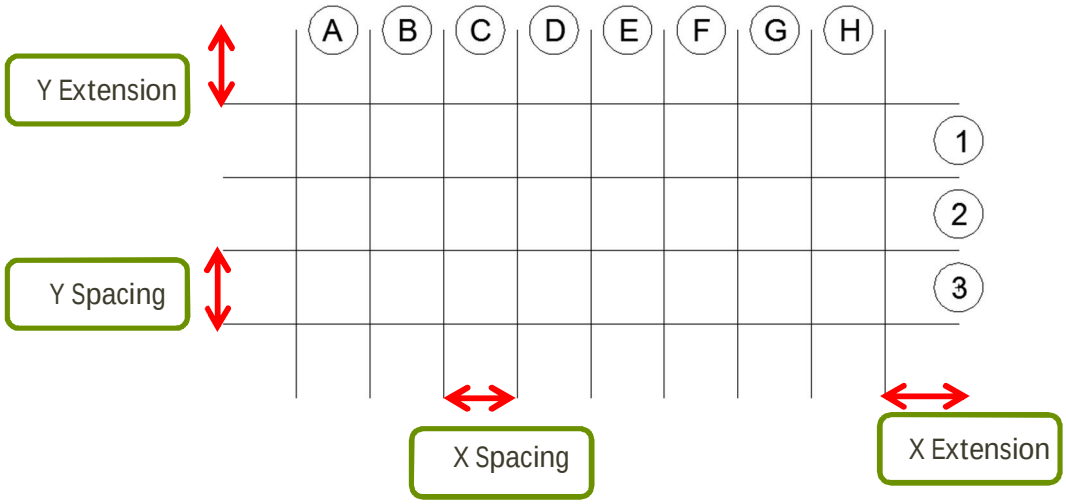



Fig. 148 – Inserted Grid showing Extension vs Spacing

## X Spacing

This box lets you define the horizontal distance between the vertical lines of the grid.

## Y Spacing

This box lets you define the vertical distance between the horizontal lines of the grid.

## X Extension

This box lets you define how far the horizontal grid lines extend past the first and last vertical grid lines.

## Y Extension

This box lets you define how far the vertical grid lines extend past the first and last horizontal grid lines.

## Text Size

This box controls the height of text used as the row and column labels. It should be adjusted to suit the spacing of the grid lines.

## Circle Text

If this option is ticked the text used as row and column labels have a circle drawn around them, as shown in the example above.

## Labels Between Grid Lines

If this option is ticked the row and column labels are positioned between the grid lines as shown in the example above. If it is not ticked the labels are placed at the end of the grid lines, as shown below.

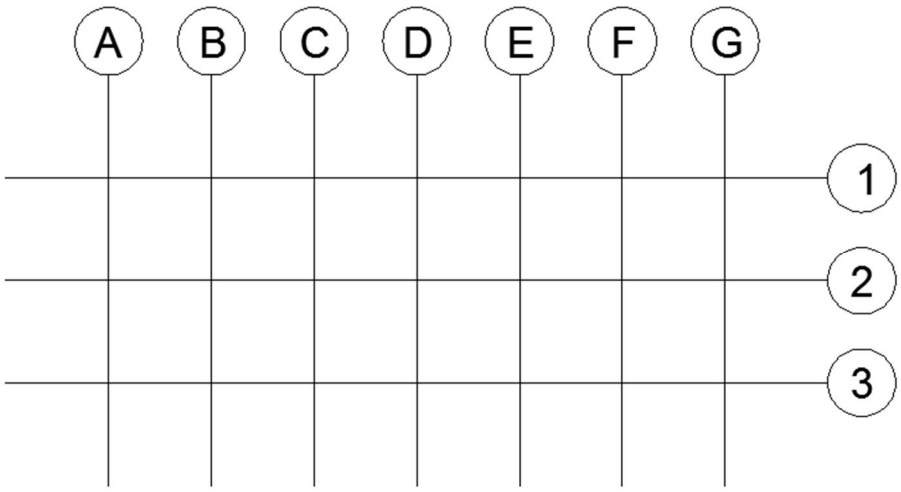



Fig. 149 – Grid inserted example

## Inserting the Grid

When the OK button is clicked you are prompted to locate the lower left corner and upper right corner of the grid. As you drag your crosshair across the screen the grid is dynamically displayed so you know how it is going to look.

The grid is drawn immediately the upper right corner is selected.

The grid lines and circles are drawn using the current colour, layer, style and weight settings. The text is drawn with the current text settings. It is highly recommended that the grid be put on a separate layer so it can be turned off if necessary.

When inserted, the grid is "grouped", i.e., selecting any part of the grid automatically selects the entire grid. This makes it easy to work with the grid as if it was a single item. You can "ungroup" the grid if desired.

### Note

This grid is a visual reference grid and is not the same as the standard CAD snapping grid.

# Set Heights

Set Heights

Set Heights assigns height values to entities in your drawing, in preparation for generating a 3D Digital Terrain Model (DTM) using the Insert DTM command.

Fig. 150 – Set Heights dialog box

For an entity to be used when generating a DTM it must have some sort of height. This height can be an actual physical height, i.e., a 'Z' coordinate, or it can be an "assigned" height, i.e., a value assigned by this command to an entity such as a line or point etc.

**Note**

A height of 0 (zero) is still a valid height.

The entities having heights assigned to them would typically be representing contours, spot heights, boundaries, landforms, etc.

Height values can be assigned to points, lines, arcs, circles and curves.

**Note**

Assigning a height to an entity does not physically move it to that height.

This command is also used to edit heights that have already been assigned.

If no entities have been selected prior to running the command, you are prompted to select an entity and then the dialog box shown below is displayed.

If an entity or entities have been selected before running the command, the dialog box shown below is displayed immediately.

**Note**

If you want to assign the same height to multiple entities it is more efficient to select them before running the command. Once the command starts you can only assign a height to one entity at a time.

The text below explains the options in this dialog box.

## DTM Height

This box lets you enter the required height value that will be assigned to the selected entity or entities.

If the entity or entities have never had heights assigned to them, 0.0 (zero) will be displayed.

If the entity or entities already have a height assigned to them, their height value will be displayed.

**Note**

If you pre-select multiple entities that have different heights assigned to them, the height of the first entity that had a height assigned to it will be displayed.

## Text Size

This box lets you define the size at which the DTM text label will be displayed on the screen when you click the Show Heights button (see below). The text size is influenced by the next option, Scale Text by the Plot Scale and can work in either of the following two ways

1. If the Scale Text by the Plot Scale option is ticked, then the text size entered is automatically multiplied by the view's Plot Scale and the text is displayed on the screen at that scaled size.

   For example, if a text size of 4mm is entered and the Plot Scale is 100, the text will be displayed on screen at 400mm high.

   This technique lets you define the text size based on the height you want it to be when it is printed on paper. If the Plot Scale is changed for some reason, the on-screen text height will automatically adjust, but, providing you print the drawing at the specified Plot Scale, the text will always print at the height specified.

For example, a text height of 4mm and a Plot Scale of 100 produces on-screen text at 400mm high. Printing the drawing at a scale of 1:100 will produce text 4mm high on the paper. Change the Plot Scale to 200 and the on-screen text will become 800mm high, but printing the drawing at a scale of 1:200 will still produce text 4mm high on the paper.

2. If the Scale Text by the Plot Scale option is not ticked, then the text size entered is the on-screen height. It is not, in any way, affected by the view's Plot Scale.

   For the text to be visible on the screen, the size must be calculated accordingly.

   This technique will produce printed text of a different size if the Plot Scale is changed.

   For example, if a text height of 400mm is specified and the Plot Scale is 100, the printed text will be 4mm high, but if the Plot Scale is changed to 200, the printed text would be 2mm high.

## Scale Text by the Plot Scale

This tick box controls whether the text size entered is automatically multiplied by the view's Plot Scale for on-screen display. Refer to the previous section, Text Size for more details.

## Set Height

When this button is clicked, the height value entered is assigned to the selected entity or entities. There is no visual indication of this, although the height values can be displayed with the "Show Heights" button (see below).

After a height has been assigned you are prompted to select another entity to assign a height to.

## Show Heights

When this button is clicked the height values (DTM text labels) are displayed next to each entity, at the text size specified, as shown below.

When the height values are displayed, this button changes to "Hide Heights" letting you hide them if you don't need to see them anymore.

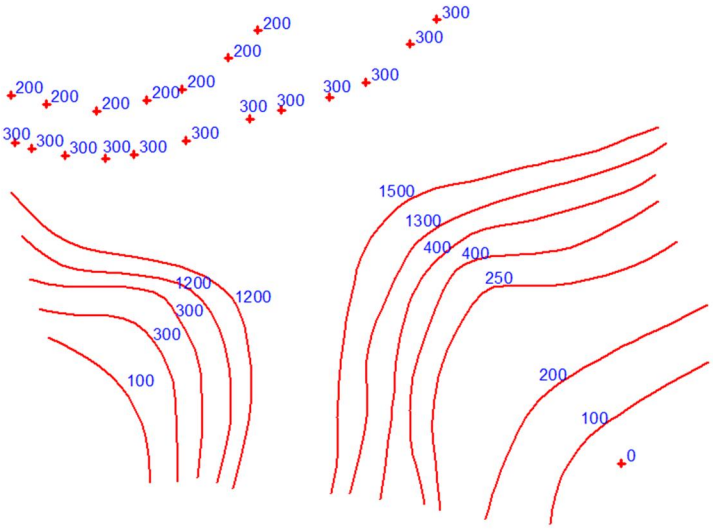



Fig. 151 – Contour example

## Deleting Assigned Heights

The height values are attached to the entities as attributes. To completely delete the attribute, and hence the assigned height, select the entity or entities you wish to change the height, then run the Set Heights command and type 0 as value.

Fig. 151 – Type 0 as DTM Height to delete the assigned height

# Insert DTM

Insert DTM

Insert DTM generates 3D Digital Terrain Model (DTM) based on the actual and assigned heights of the selected entities.

A DTM is basically a rectangular set of triangles draped over the selected entities. Examples are shown below.

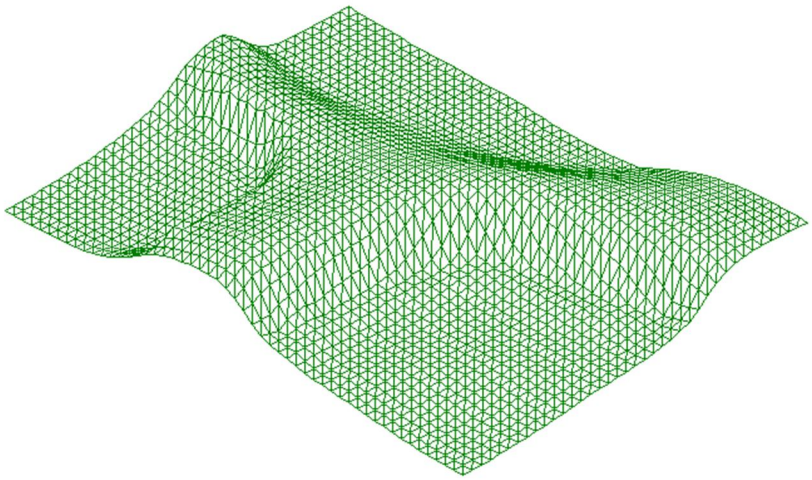


Fig. 152 – Hidden lines removed

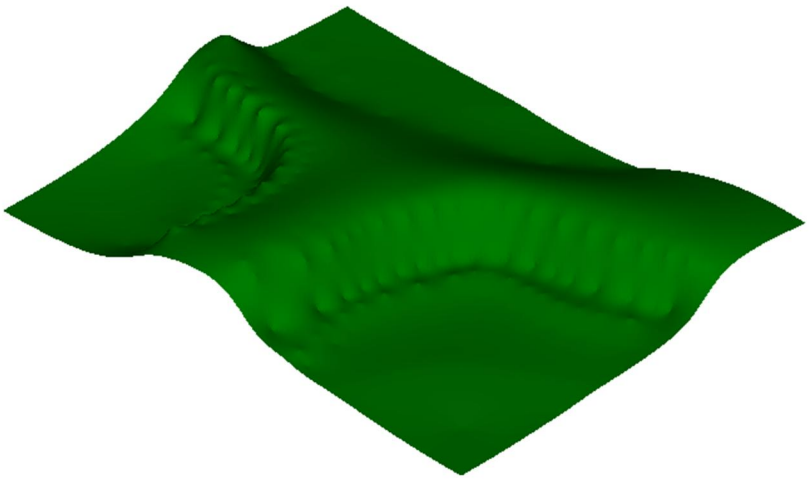


Fig. 153 – Shaded view

If a selected entity has not been assigned a height value using the Set Heights command (see previous section), the 'Insert DTM' process uses the height at which the entity was inserted, i.e., its physical Z height. This is typically zero in 2D drawings so it is important that all the selected entities have first had their real life heights assigned.

**Note**

If an entity has an actual, physical height and an assigned height, the assigned height is used by this command.

The entities to be used in the creation of the DTM must be selected before the command is run.

When the command is selected, the following dialog box is displayed.

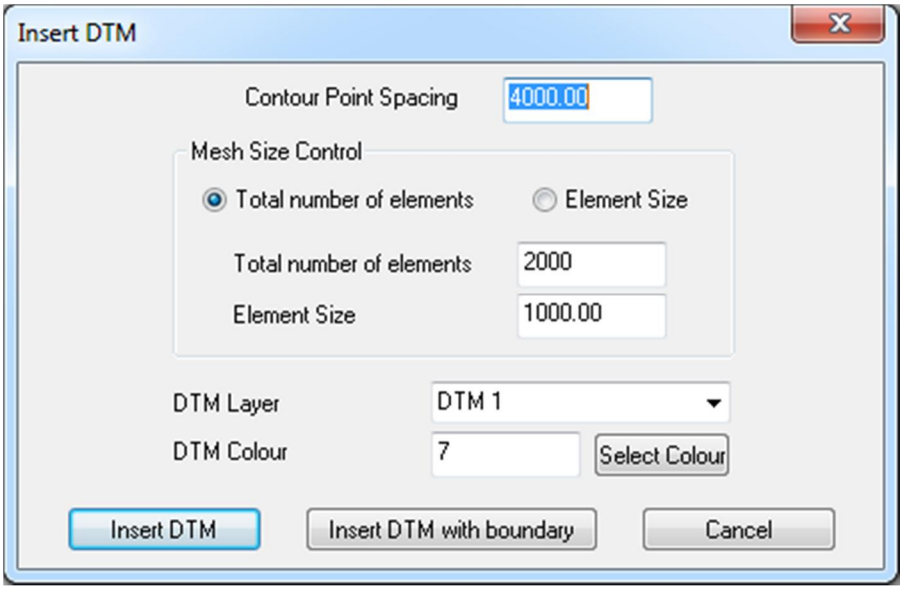



Fig. 154 – Insert DTM dialog box

The text below explains the options in this dialog box.

## Contour Point Spacing

When generating a DTM, each selected linear entity (line, arc, circle and curve) has temporary "contour points" defined along it. This box lets you define the spacing between these contour points.

The spacing is in millimetres.

Smaller spacing generates more contour points and produces a more accurate DTM shape.

However, smaller spacing also increase the amount of time it takes to generate the DTM.

As a rule of thumb, a contour point spacing of 500 is a good value for a DTM of an “average” block of land. If the DTM covers a larger area of land, it could be increased.

**Tip**

If in doubt, use a larger value as it will generate the DTM more quickly and make it easier for you to determine the appropriate value.

## Mesh Size Control

Mesh Size Control allows you to control the total number of triangles (elements) used to generate the DTM. This box lets you define how many triangles you want to use.

Total Number of Elements

Total Number of Elements refers as the number of triangles (elements) that will display when drawing the DTM.

Make sure Total number of elements radio button is selected,

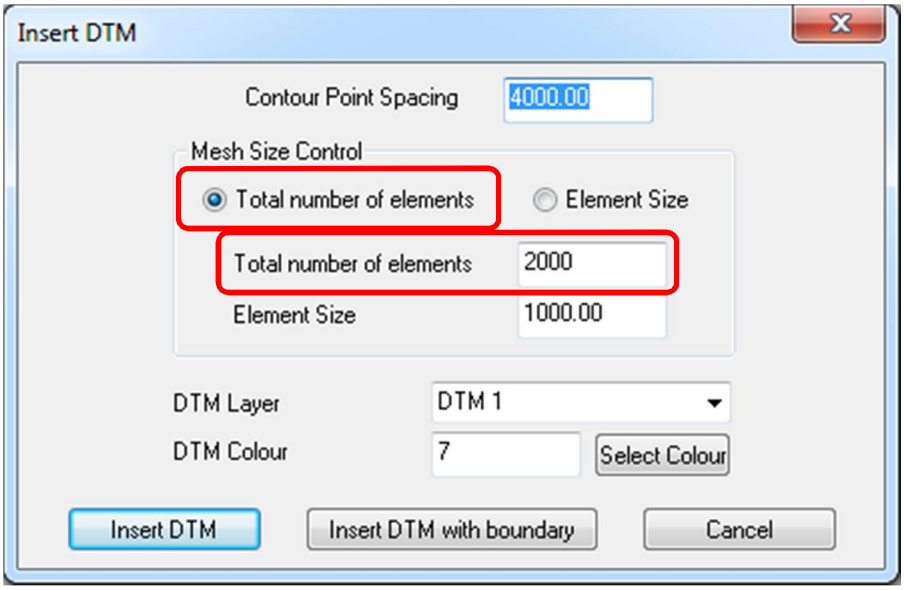



Fig. 155 – Setting up the Total number of elements

A higher number will give a more accurate DTM shape, but the DTM will take longer to generate.

As a rule of thumb, a mesh size of 2000 is a good starting value for a DTM of an “average” block of land. If the DTM covers a larger area of land, it could be increased.

## Tip

If in doubt, use a smaller value as it will generate the DTM more quickly and make it easier for you to determine the appropriate value.

Element Size

Element Size refers to the horizontal size of the triangle (element). This value is approximate.

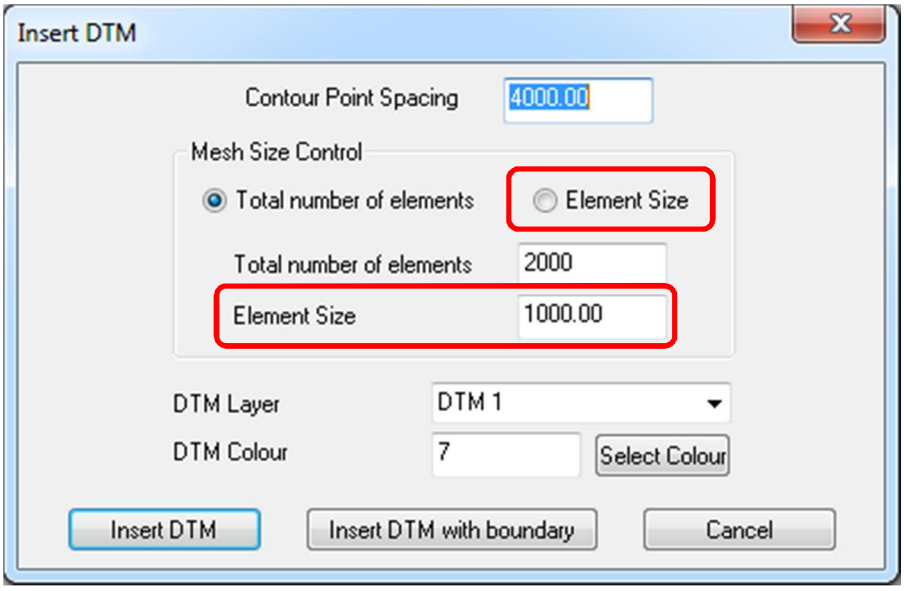



Fig. 156 – Setting up the Element Size

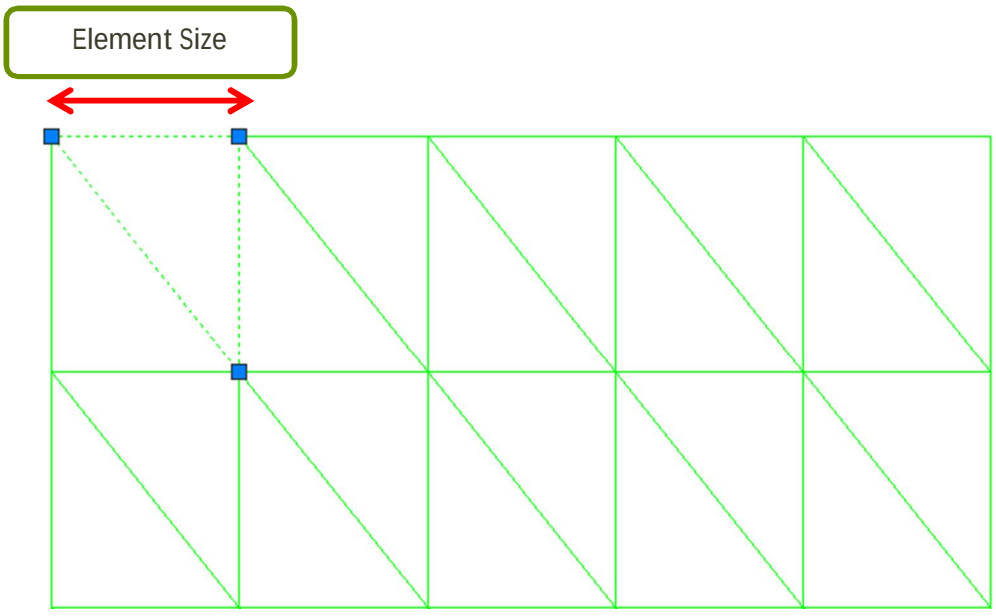



Fig. 157 – Element Size Example

## DTM Layer

This box lets you select the layer on which you want the DTM generated.

The layer can be selected from a list by clicking on the triangle at the end of the box (drop down list), as shown below.

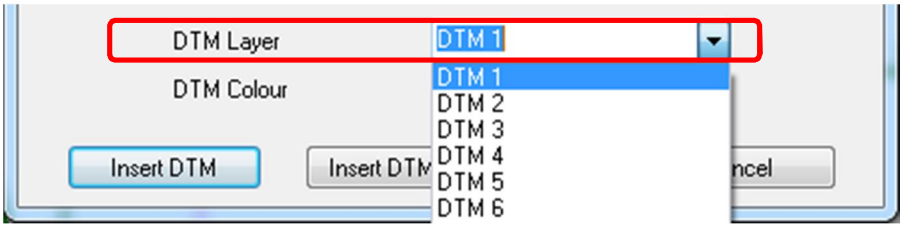



Fig. 158 – Selecting the DTM Layer

The listed layers are named layers and correspond to the standard LANDWorksCAD numbered layers as follows.

| Name | Number | Name | Number |
|---|---|---|---|
| DTM 1 | 501 | DTM 11 | 511 |
| DTM 2 | 502 | DTM 12 | 512 |
| DTM 3 | 503 | DTM 13 | 513 |
| DTM 4 | 504 | DTM 14 | 514 |
| DTM 5 | 505 | DTM 15 | 515 |
| DTM 6 | 506 | DTM 16 | 516 |
| DTM 7 | 507 | DTM 17 | 517 |
| DTM 8 | 508 | DTM 18 | 518 |
| DTM 9 | 509 | DTM 19 | 519 |
| DTM 10 | 510 | DTM 20 | 520 |

Fig. 159 – DTM Layer Table

## DTM Colour

This box lets you select the colour with which you want to display the DTM.

The colour number can be typed directly into the box or it can be selected from a palette by clicking on the “Select Colour” button, as shown below.

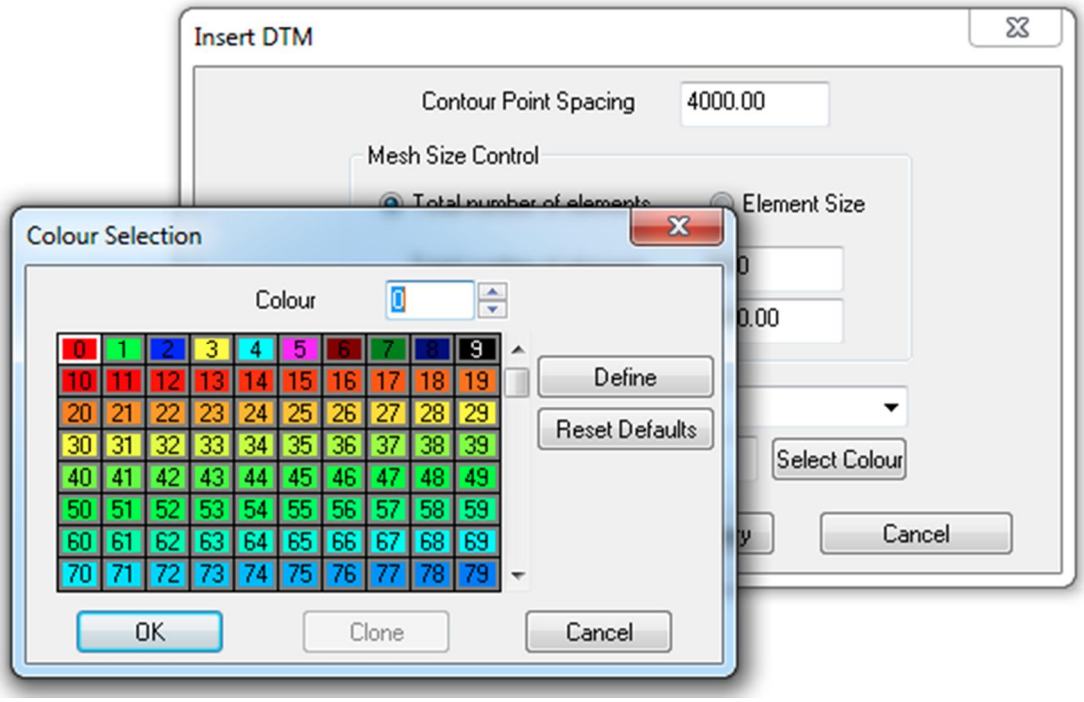



Fig. 160 – Select DTM colour

## Insert DTM button

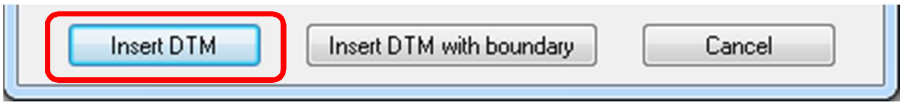



Fig. 161 – Insert DTM button

Clicking this button generates the DTM based on the options entered into the dialog box. No further user input is required.

### Note

If the Contour Point Spacing is small and/or the Mesh Size is large, it may take a few minutes to generate the DTM.

A sample isometric view of a DTM is shown below. The entities used to generate the DTM can still be seen.

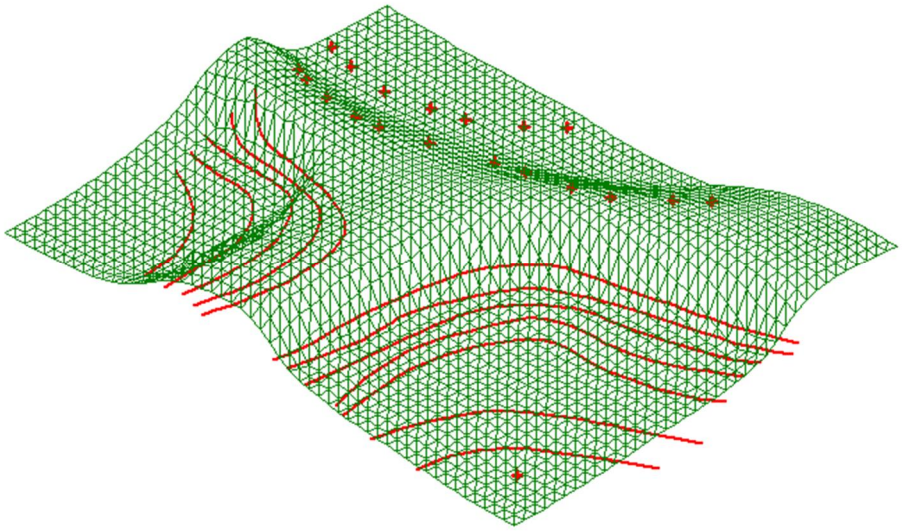


Fig. 162 – Isometric view of a DTM

The picture below shows four views of the DTM – Top, ISO, Front and Right.

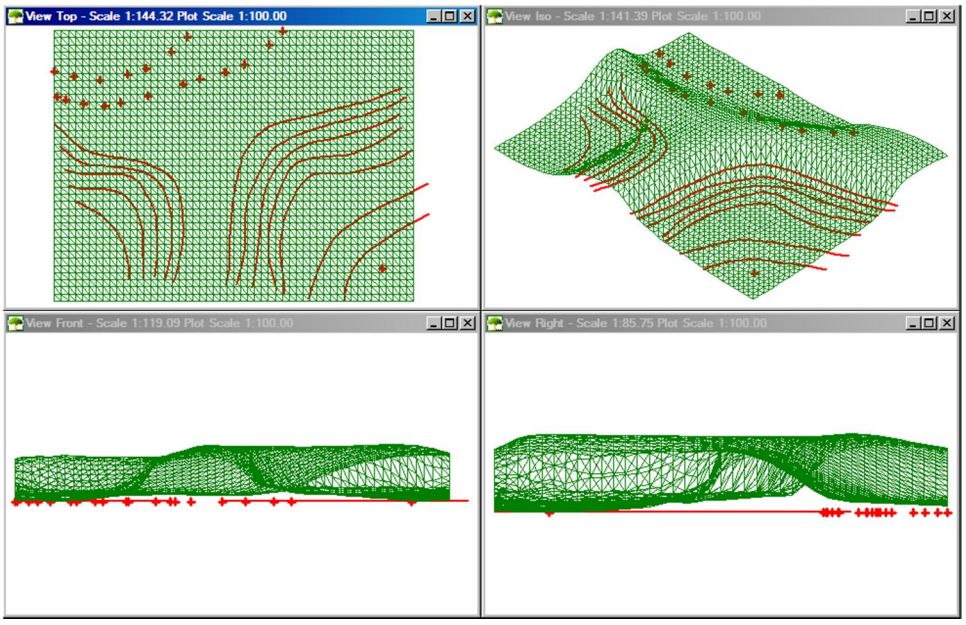

View Top - Scale 1:144.32 Plot Scale 1:100.00
View Iso - Scale 1:141.39 Plot Scale 1:100.00
View Front - Scale 1:119.09 Plot Scale 1:100.00
View Right - Scale 1:85.75 Plot Scale 1:100.00

Fig. 163 – Different views from a DTM

## Insert DTM with boundary button

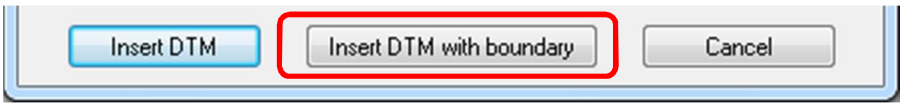



Fig. 164 – Insert DTM with boundary button

Clicking this button also generates a DTM, but you are prompted for two corners to define a rectangular boundary that limits the size of the DTM.

In the image below, a rectangle has been drawn to show the proposed boundary.

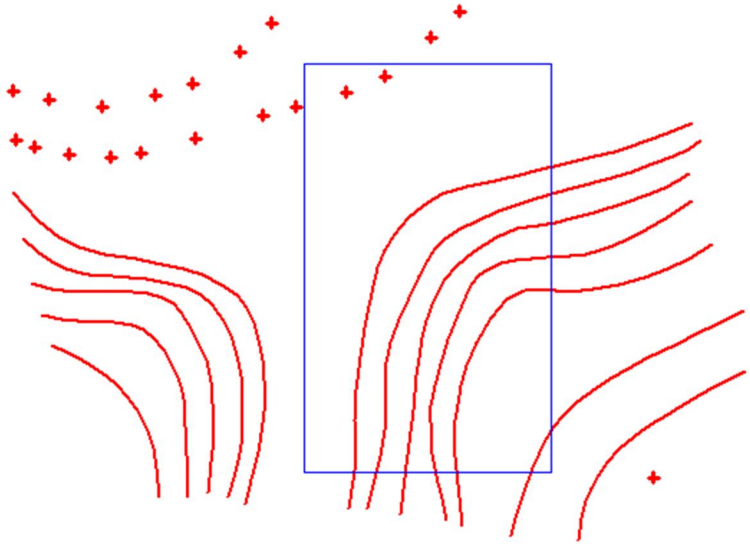


Fig. 165 – Rectangle drawn to show the proposed boundary

Clicking on any two diagonally opposite corner points would generate the DTM shown below.

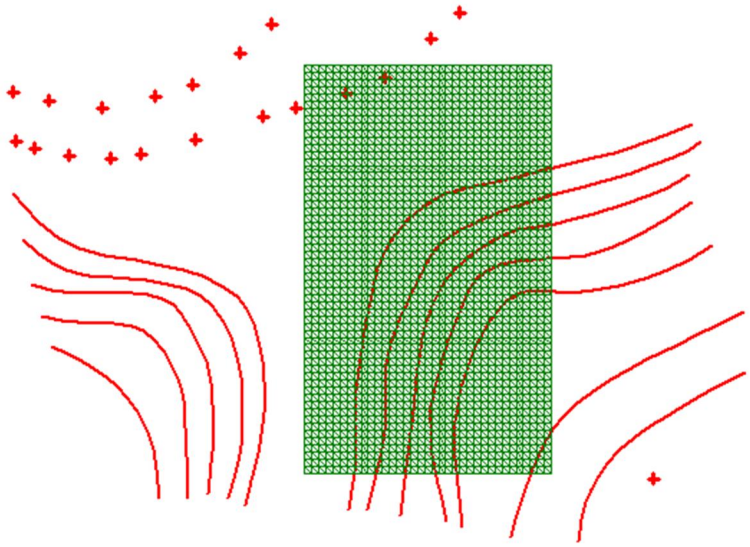


Fig. 166 – DTM generated using the rectangle boundary

The isometric view below shows the full effect of the boundary on the DTM.  Compare it to the full DTM in the previous section.

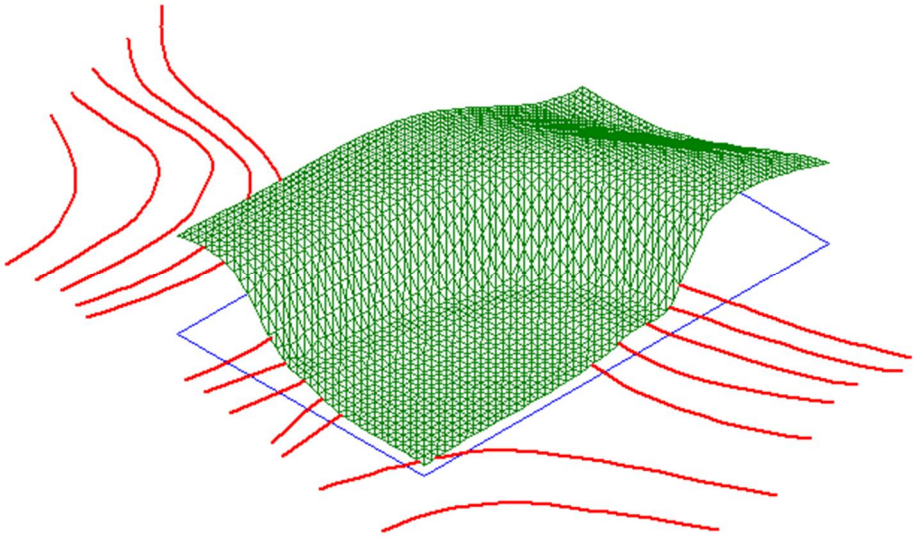


Fig. 167 – Isometric DTM view

# Modify DTM

Modify DTM

Modify DTM allows modifications of an existing DTM by a simple push/pull drag method.

The DTM is modified by effectively dragging a cone shape slowly across it, although the cone shape is not actually visible. The cone can push the DTM down, like digging a hole or trench, or pull the DTM up, like building a mound of dirt.

## Notes

This command has only recently been released and is still undergoing intensive development. As such it is not yet fully functional. It was released with the intent of obtaining feedback from users. It will change in both format and function as it is developed.

Any comments and/or suggestions about this command are welcome. Please send them to support@cad.com.au.

The following notes explain how the command works at the time of writing this manual.

When the command is selected, the following dialog box is displayed.

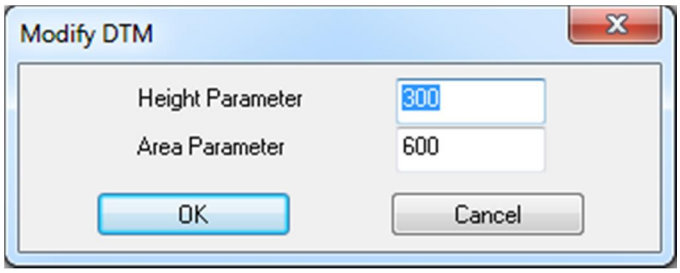



Fig. 168 – Modify DTM dialog box

The text below explains the options in this dialog box.

### Height Parameter

This box lets you set the height or depth of the cone. Simply type in the value required.

If the number is positive, the cone pulls the DTM up; if the number is negative, the cone pushes the DTM down.

## Area Parameter

This box lets you define the size of the area that is affected by the cone. Simply type in the value required.

Larger numbers will have a wider effect. It is like the base diameter of the cone.

When you click the OK button you are prompted to “Click and drag to modify the surface”.

Hold down the left mouse button and drag your crosshair across the DTM to “modify” it.

The following images demonstrate how the command works.

The first image below shows a small, flat DTM that is 10m wide by 7m high. It is flat only to demonstrate more clearly how this command works. The command will work on any DTM.

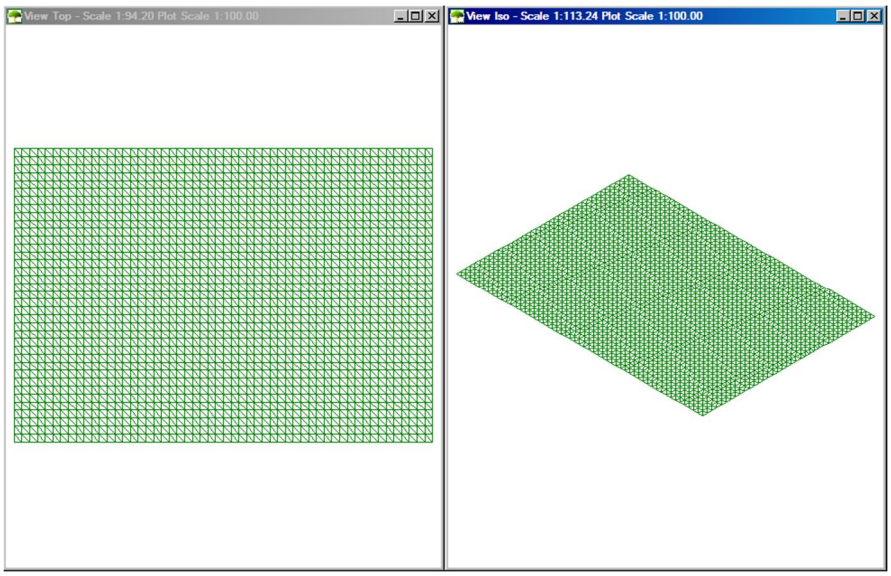



Fig. 169 – Flat DTM 10m wide by 7m high

Setting the height parameter to 500, the area parameter to 1000 and dragging the crosshair slowly from point A to point B, gives the result shown below.

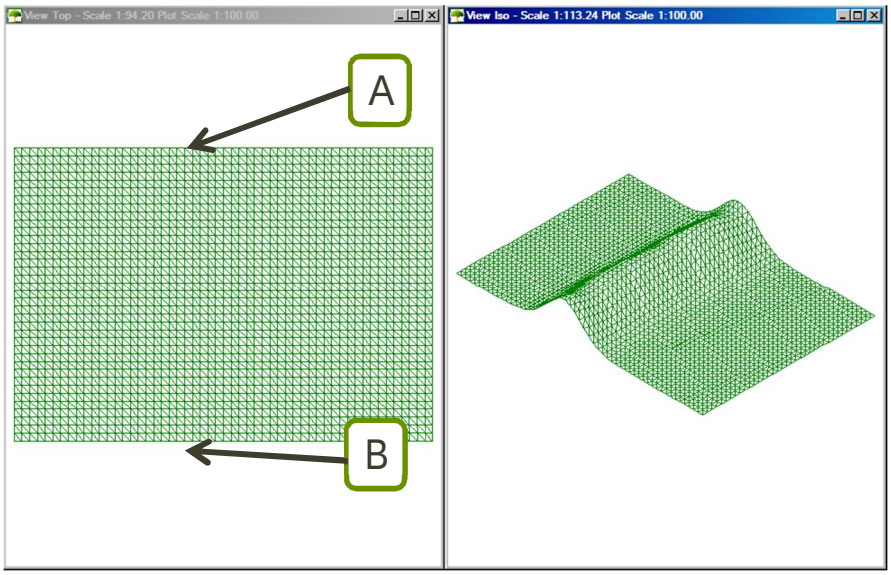



Fig. 170– DTM upwards slope generated

Setting the height parameter to -50, the area parameter to 1200 and dragging the crosshair slowly from point A to point B, gives the result shown below.

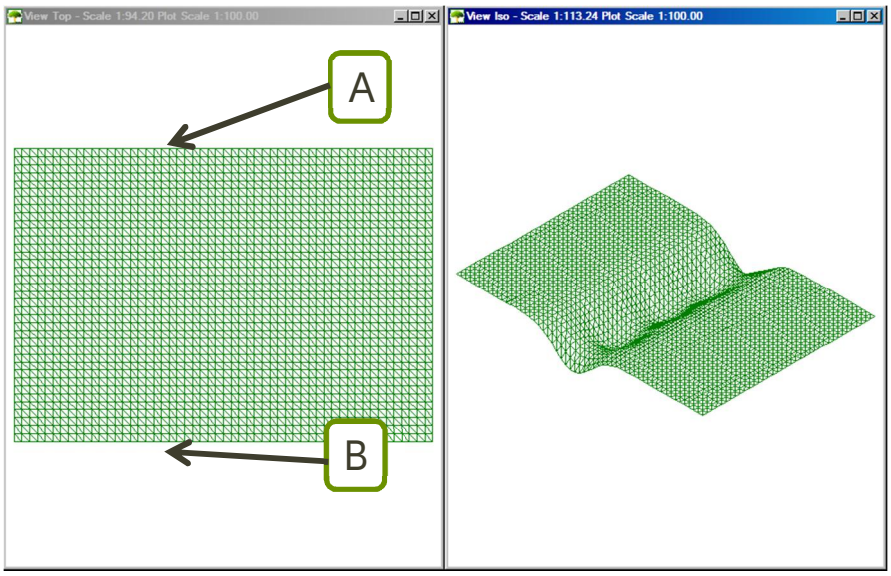



Fig. 171– DTM downwards slope generated

The speed at which the crosshair is dragged across the DTM will affect the result. Slower speeds will result in a more continuous modification.

For the images shown above the crosshair was dragged across the DTM fairly slowly. As a comparison, for the image below the crosshair was dragged across the DTM fairly quickly.

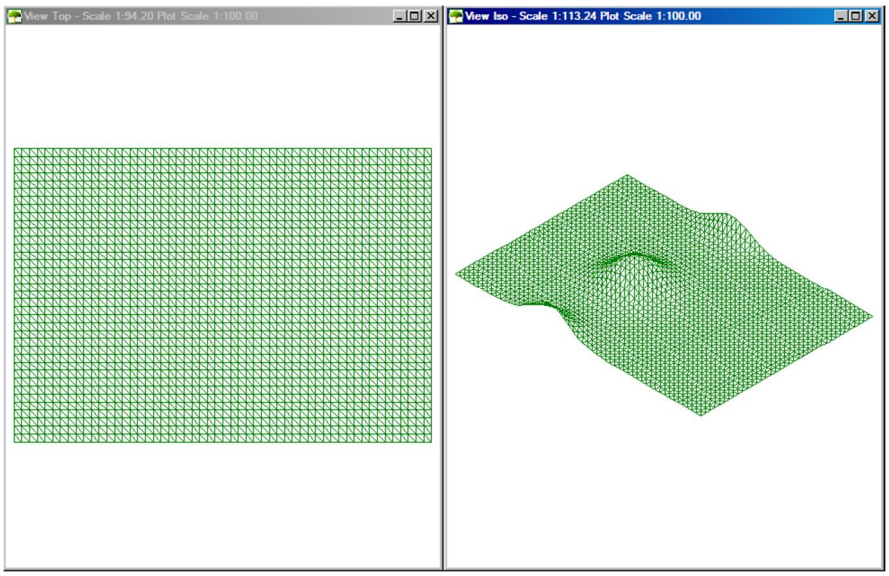



Fig. 172– DTMs will vary in shape depending on how far or slow the crosshair is dragged

Extremely slow drag speeds can be used to exaggerate the modification. In the image below, the crosshair was dragged very slowly from C to D.

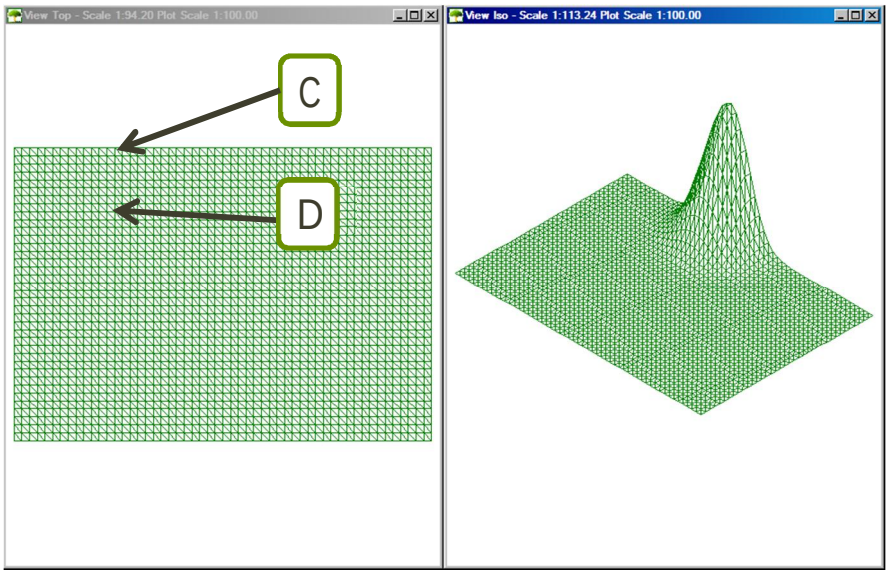



Fig. 173– Extremely slow dragging speed DTM example

# Insert Batter

Insert Batter

Insert Batter produces battered banks within an existing DTM.

The batter may represent the sides of a road, a driveway, a building slab, a swimming pool excavation, etc.

The batter can be created above and/or below the DTM.

The images below show before and after the blue “road” was put through the DTM and the batter created by this command.

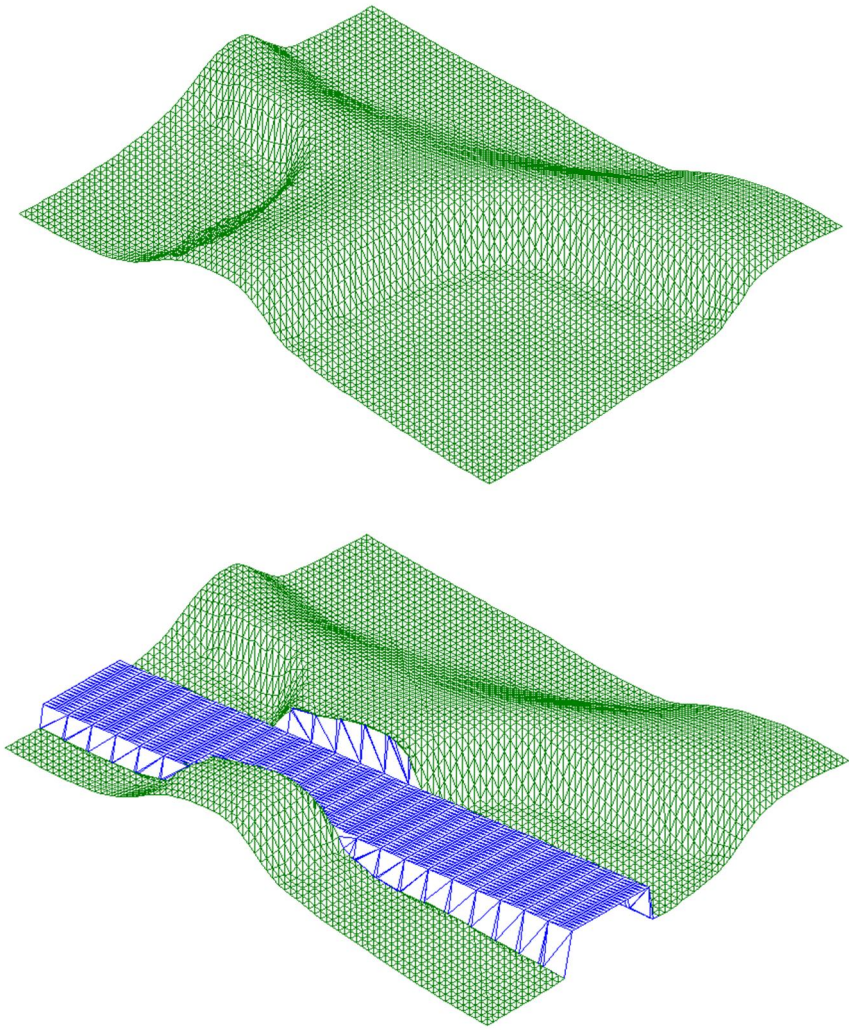


Fig. 174– Road created through the DTM

The image below shows two more examples (one with hidden lines removed, the other shaded) of the use of this command: a path twisting its way up a gentle slope and a pool excavation. Virtually any shape can be constructed using the “Insert Batter” command; it’s just up to you to work out what you want.

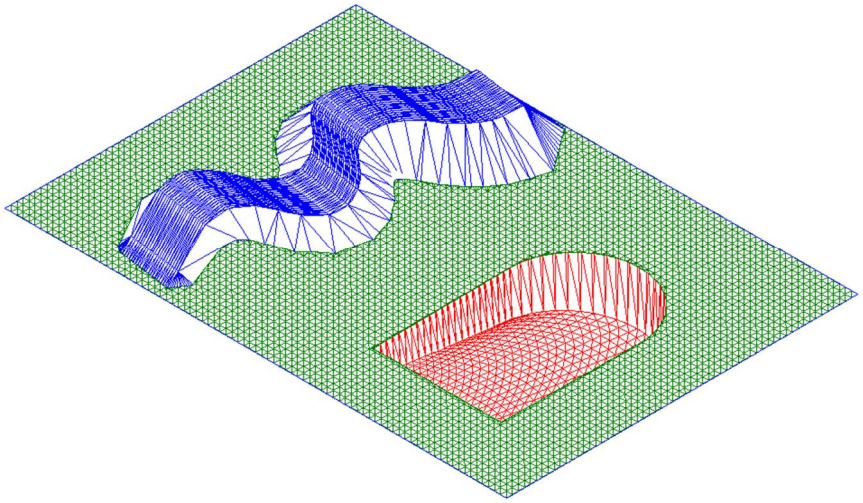


Fig. 175– Batter Examples with hidden lines removed

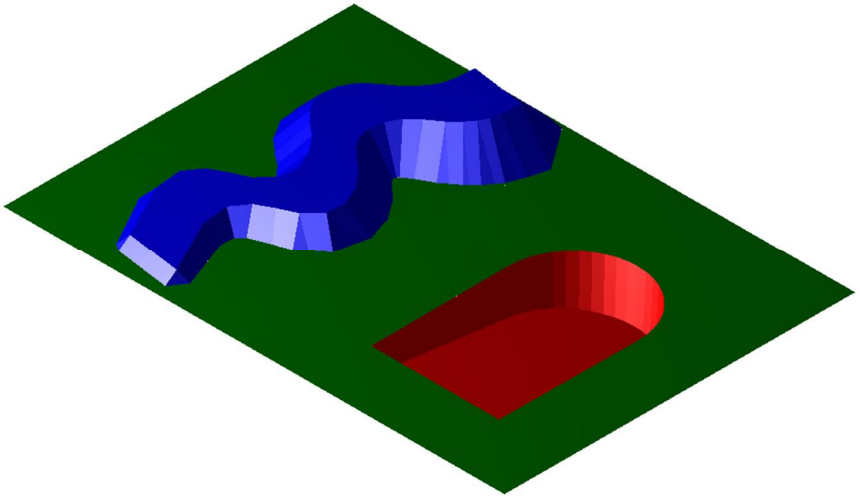


Fig. 176– Batter Examples shaded

To insert a batter, a ruled surface that represents the landscaping feature (road, driveway, slab, pool, etc.) must first be inserted in the correct position.

Then the command is selected, the following dialog box is displayed.

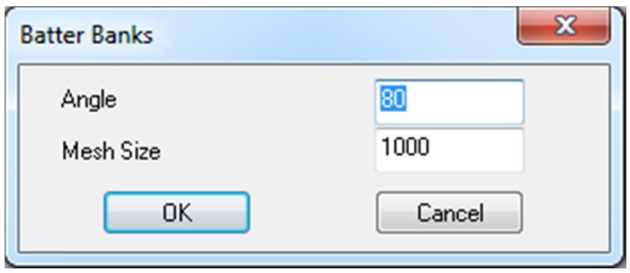



Fig. 177– Batter Banks dialog box

The text below explains the options in this dialog box.

## Angle

This box lets you define the angle of the batter. The angle is measured from horizontal at the ruled surface.

The image below shows two examples of how the batter angle is measured: one with the ruled surface above ground level, the other with the ruled surface below ground level.

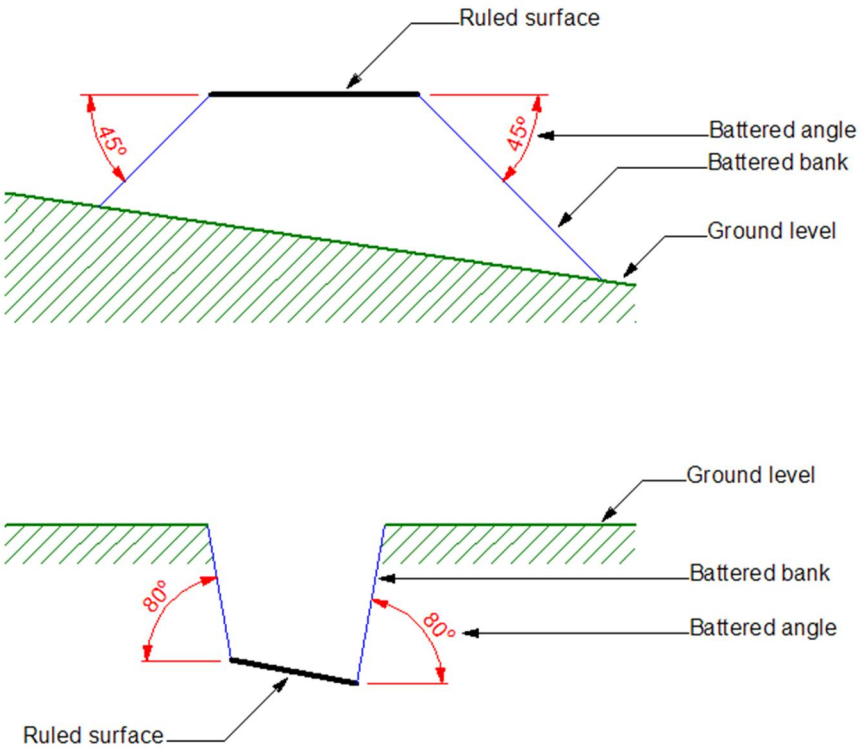



Fig. 178– Visualization on how the batter angle is measured

## Mesh Size

Mesh Size is the number of triangles used within the DTM to generate the selected surface. This box lets you define how many triangles you want to use.

A higher number will give a more accurate DTM shape, but the DTM will take longer to generate.

As a rule of thumb, a mesh size of 500 is a good starting value for a selected ruled surface.

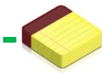
### Tip

If in doubt, use a smaller value as it will generate the DTM more quickly and make it easier for you to determine the appropriate value.

## Inserting the Batter

As mentioned previously, you need to have drawn a surface crossing the DTM in order for the command to work.

When you click the OK button you are prompted to “Locate the surface to batter”. Select the ruled surface and the battering will be created. No further user input is required.



### Notes

Depending on the complexities of the DTM and the ruled surface it may take a few minutes to generate the batter – please be patient

The batter is created with the current colour, style and weight, but it generated on the same layer as the DTM.

The entire batter process can be reversed with a single Undo command.

Limitation: A current limitation of this command is that the ruled surface should not extend beyond the edges of the DTM.

# Insert Contours

Insert Contours

Insert Contours generate and insert contours based on the DTM. The contours are labelled with their heights.

An example of contours is shown below.

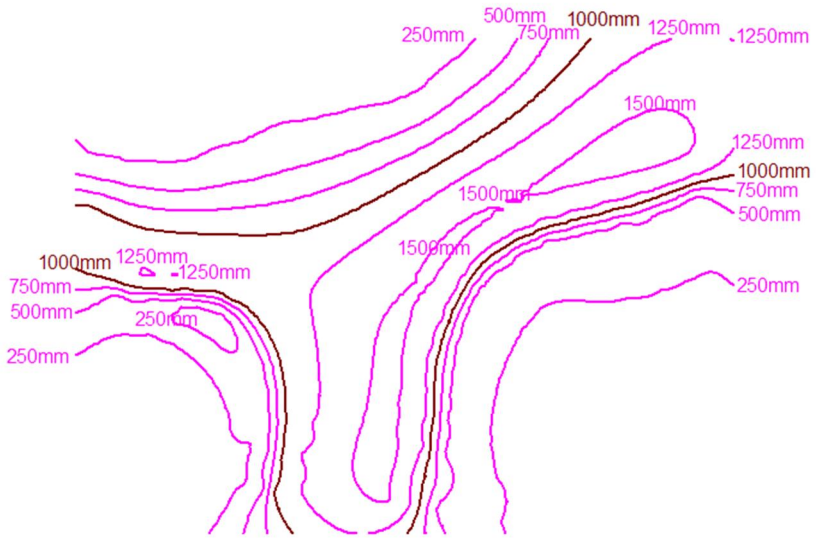



Fig. 179– Contours Example

This command slices horizontally through the DTM at multiples of the specified height and generates the corresponding contours. The contours are curve entities and they are drawn at a Z height of zero so they can be used as simple 2D drawing elements.

When the command is selected, the following dialog box is displayed.

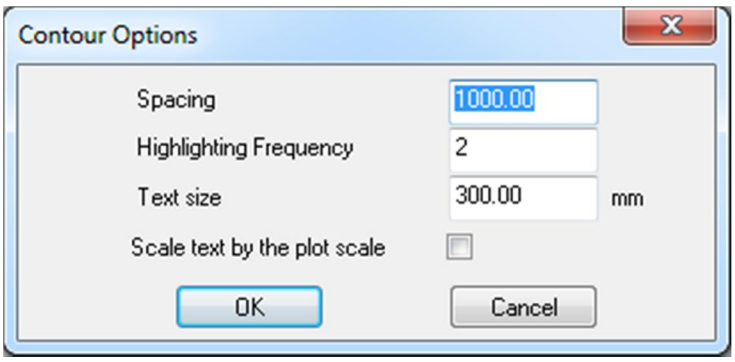



Fig. 180– Insert Contours dialog box

The text below explains the options in this dialog box.

## Spacing

This box lets you define how far apart the contours are spaced. The value entered is the lowest contour height; subsequent contours are generated at multiples of that value. For example, if "250" is entered, contours are generated at 250, 500, 750, 1000 and so on.

The spacing is measured in millimetres.

## Highlighting Frequency

By default, contours are drawn in the current colour. This box lets you define how often the colour is changed to the next colour number, for ease of identifying the contours. The dialog box above shows that that every fourth contour line would be drawn in the next colour. For example, if the current colour was 5 (magenta), the first three contours would be drawn in that colour, the fourth contour would drawn in colour 6 (brown), the next three contours would be drawn in colour 5 again, the eighth contour would be drawn in colour 6 again, and so on.

**Note**

Contours are also drawn in the current layer, style and weight, but only the colour changes as a highlight.

**Tip**

If you want all contours drawn in the same colour set the Highlighting Frequency to a high value; higher than the expected number of contours, e.g., 100.

## Text Size

This box lets you define the size at which the text showing the contour heights will be displayed on the screen. The contour heights are displayed near the ends of the contours, where possible.

The text size is influenced by the next option, Scale Text by the Plot Scale and can work in either of the following two ways

1. If the Scale Text by the Plot Scale option is ticked, then the text size entered is automatically multiplied by the view's Plot Scale and the text is displayed on the screen at that scaled size.

For example, if a text size of 4mm is entered and the Plot Scale is 100, the text will be displayed on screen at 400mm high.

This technique lets you define the text size based on the height you want it to be when it is printed on paper. If the Plot Scale is changed for some reason, the on-screen text height will automatically adjust, but, providing you print the drawing at the specified Plot Scale, the text will always print at the height specified.

For example, a text height of 4mm and a Plot Scale of 100 produces on-screen text at 400mm high. Printing the drawing at a scale of 1:100 will produce text 4mm high on the paper. Change the Plot Scale to 200 and the on-screen text will become 800mm high, but printing the drawing at a scale of 1:200 will still produce text 4mm high on the paper.

2. If the Scale Text by the Plot Scale option is not ticked, then the text size entered is the on-screen height. It is not, in any way, affected by the view's Plot Scale.

   For the text to be visible on the screen, the size must be calculated accordingly.

   This technique will produce printed text of a different size if the Plot Scale is changed.

   For example, if a text height of 400mm is specified and the Plot Scale is 100, the printed text will be 4mm high, but if the Plot Scale is changed to 200, the printed text would be 2mm high.

## Scale Text by the Plot Scale

This tick box controls whether the text size entered is automatically multiplied by the view's Plot Scale for on-screen display. Refer to the previous section, Text Size for more details.

## Inserting the Contours

When the OK button is clicked the contours are automatically generated; there is no further user input required.

### Note

A DTM must already exist for this command to work.

The first image below shows the contours generated from the DTM below it.

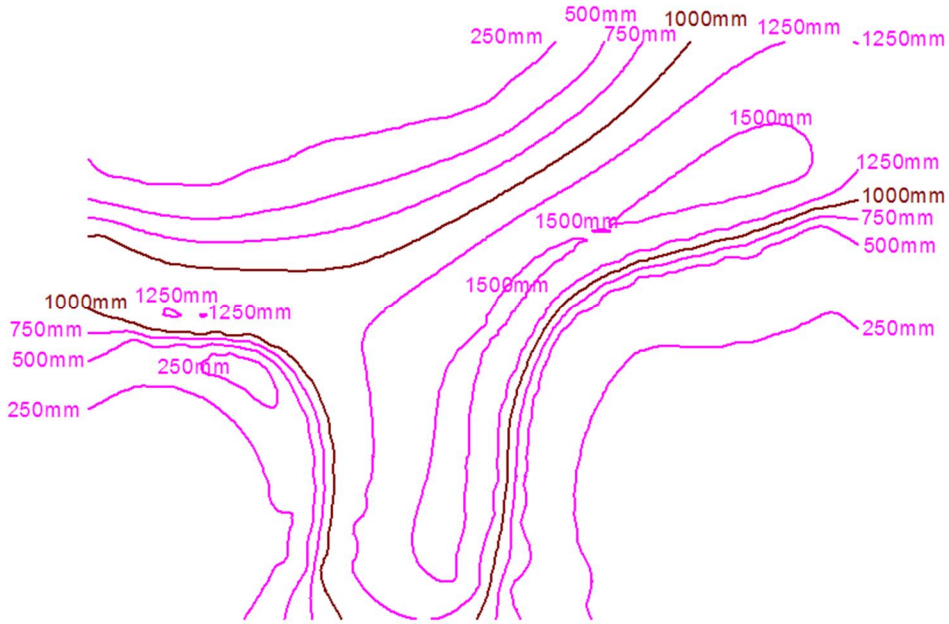



Fig. 181– Contours example generated from DTM sample below

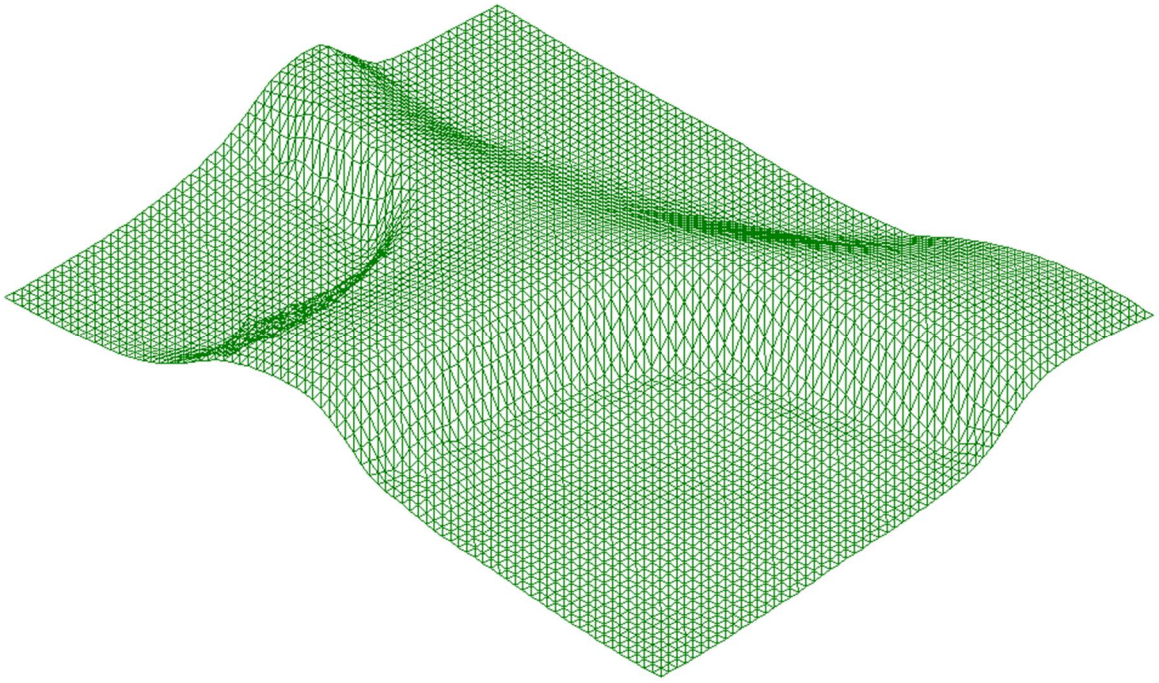


Fig. 182– DTM example

# Adjust Plant Heights

Adjust Plant Heights

Adjust Plant Heights assigns an “adjustment height” to plant. This height will be used to raise or lower the plant relative to the DTM when the Insert 3D Plants command is run.

Normally the Insert 3D Plants command inserts the plants exactly on the actual DTM, but this command lets you over-ride that.

This is to facilitate a tree sitting in a pot or raised above the ground on a wall, etc. The idea is to give you flexibility for each plant/figure.

Visual examples of the effect of this command are shown in the next section, Insert 3D Plants.

## Note

A plant, or plants, must be selected before running the command. If this is not done, the following dialog box will appear.

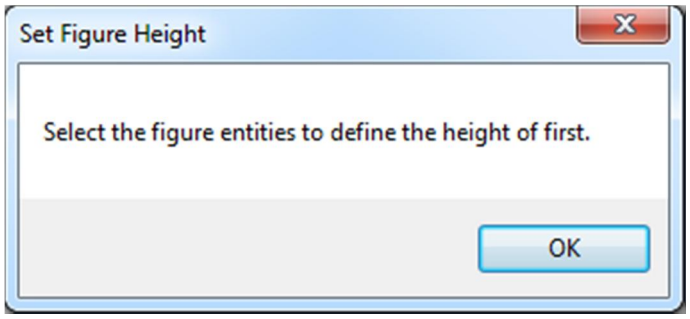



Fig. 183– Plants must be selected prior running the command

When the command is selected, the following dialog box is displayed.

Fig. 184– Set Figure Height dialog box

The text below explains the options in this dialog box.

## Figure Height

This box lets you set the height of the plant, relative to its location on the DTM. The height is in millimetres.

A positive number will raise the plant above the DTM; a negative number will lower the plant into the DTM.

## Text Size

This box lets you define the size at which the text showing the plant heights will be displayed on the screen. The heights are displayed next to the plants.

The text size is influenced by the next option, Scale Text by the Plot Scale and can work in either of the following two ways

1. If the Scale Text by the Plot Scale option is ticked, then the text size entered is automatically multiplied by the view's Plot Scale and the text is displayed on the screen at that scaled size.

   For example, if a text size of 4mm is entered and the Plot Scale is 100, the text will be displayed on screen at 400mm high.

   This technique lets you define the text size based on the height you want it to be when it is printed on paper. If the Plot Scale is changed for some reason, the on-screen text height will automatically adjust, but, providing you print the drawing at the specified Plot Scale, the text will always print at the height specified.

   For example, a text height of 4mm and a Plot Scale of 100 produces on-screen text at 400mm high. Printing the drawing at a scale of 1:100 will produce text 4mm high on the paper. Change the Plot Scale to 200 and the on-screen text will become 800mm high, but printing the drawing at a scale of 1:200 will still produce text 4mm high on the paper.

2. If the Scale Text by the Plot Scale option is not ticked, then the text size entered is the on-screen height. It is not, in any way, affected by the view's Plot Scale.

   For the text to be visible on the screen, the size must be calculated accordingly.

   This technique will produce printed text of a different size if the Plot Scale is changed.

   For example, if a text height of 400mm is specified and the Plot Scale is 100, the printed text will be 4mm high, but if the Plot Scale is changed to 200, the printed text would be 2mm high.

## Scale Text by the Plot Scale

This tick box controls whether the text size entered is automatically multiplied by the view's Plot Scale for on-screen display. Refer to the previous section, Text Size for more details.

When the OK button is clicked, the height value entered is assigned to the selected plant or plants. There is no visual indication of this; the plants are simply being preparing for the Insert 3D Plants command. The height values can be displayed with the Show Heights button (see below).

## Show Heights

When this button is clicked the height values are displayed next to each entity, at the text size specified, as shown below.

When the height values are displayed, this button changes to "Hide Heights" letting you hide them if you don't need to see them anymore.

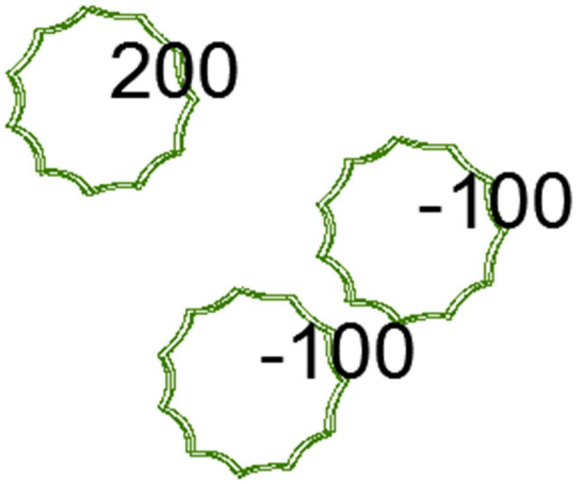



Fig. 185– Plants showing its height

# Insert 3D Plants

Insert 3D Plants

Insert 3D Plants places the plants onto the actual DTM based on their position on the landscape plan.

The 2D plan figures of the plants can be simply moved up onto the DTM or the elevation/3D figures of the plants, as defined in the plant database, can be inserted, replacing the 2D figures.

You can switch between the 2D and 3D figures at any stage.

The command finds the inserted plant figures, looks directly above (or below) them to find their corresponding locations on the DTM and then moves the 2D figures or inserts the elevation/3D figures as directed.

The figures can be inserted at their current size or updated for a particular age, based on information in the database, i.e., maximum height, maximum width and maturity.

When the command is selected, the following dialog box is displayed.

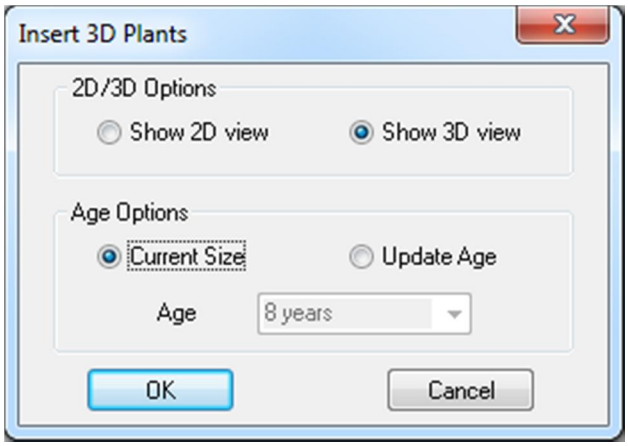



Fig. 186– Insert 3D Plants dialog box

The text below explains the options in this dialog box.

## Show 2D View

This option tells LANDWorksCAD to display the 2D plan figures of the plants on the DTM.

The image below shows plants (red) that have been inserted normally into a plan. As you can see, they are all below the DTM.

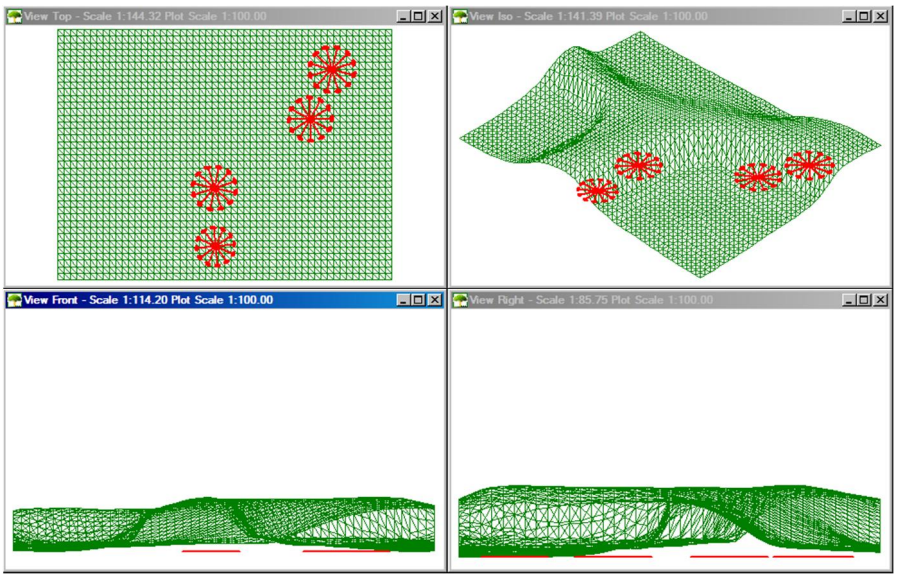

View Top - Scale 1:144.32 Plot Scale 1:100.00
View Iso - Scale 1:141.39 Plot Scale 1:100.00
View Front - Scale 1:114.20 Plot Scale 1:100.00
View Right - Scale 1:85.75 Plot Scale 1:100.00

Fig. 187– Plants (red) inserted into a plan, below the DTM

The plants in the image below have been processed by the Insert 3D Plants command with the "Show 2D View" option selected. You can see that the plants have been moved up on to the DTM. This is most obvious in the Front and Right views (the bottom two). Some plants have had their heights adjusted relative to the DTM with the Adjust Plant Heights command (see the previous section).

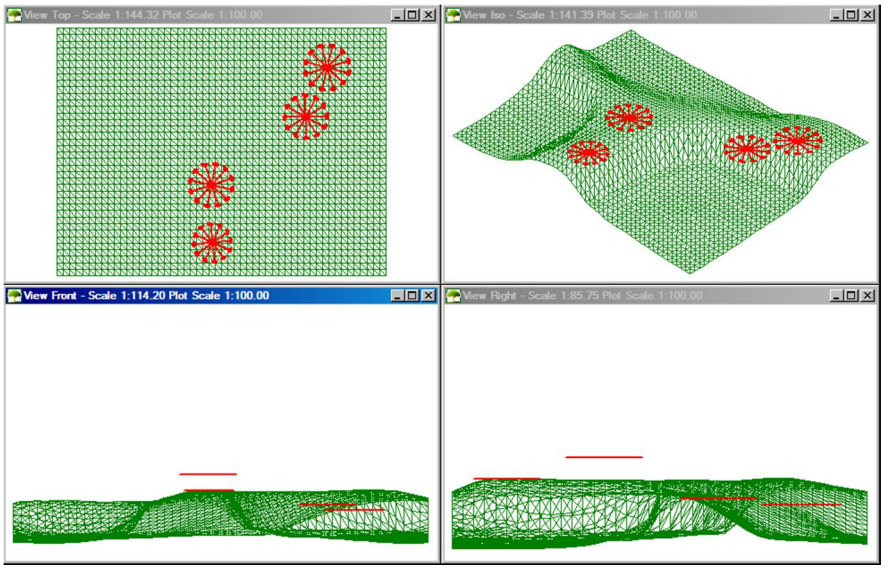

View Top - Scale 1:144.32 Plot Scale 1:100.00
View Iso - Scale 1:141.39 Plot Scale 1:100.00
View Front - Scale 1:114.20 Plot Scale 1:100.00
View Right - Scale 1:85.75 Plot Scale 1:100.00

Fig. 188– Plants moved up to the DTM

## Show 3D View

This option tells LANDWorksCAD to display the elevation/3D figures of the plants on the DTM.

The image below shows plants (red) that have been inserted normally into a plan. As you can see, they are all below the DTM.

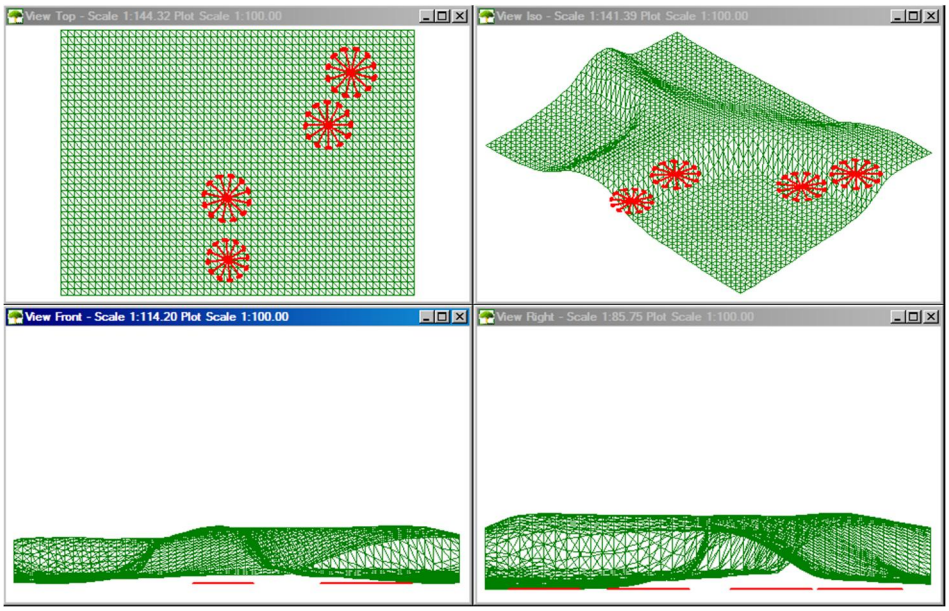

View Top - Scale 1:144.32 Plot Scale 1:100.00
View Iso - Scale 1:141.39 Plot Scale 1:100.00
View Front - Scale 1:114.20 Plot Scale 1:100.00
View Right - Scale 1:85.75 Plot Scale 1:100.00

Fig. 189 – Plants below the DTM

The plants in the image below have been processed by the Insert 3D Plants command with the "Show 3D View" option selected. You can see that the plants have been moved up on to the DTM. This is most obvious in the Front and Right views (the bottom two). Some plants have had their heights adjusted relative to the DTM with the Adjust Plant Heights command (see the previous section).

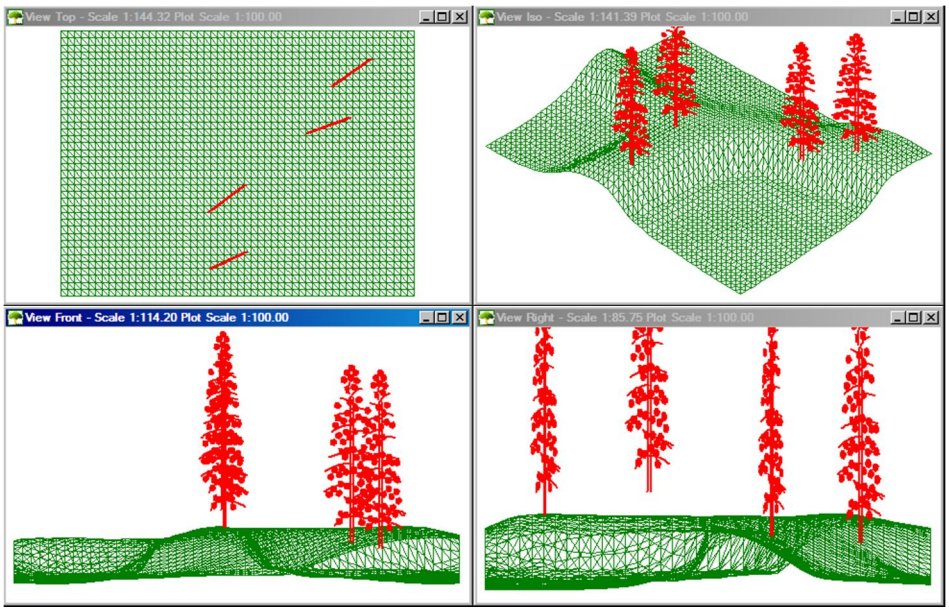

View Top - Scale 1:144.32 Plot Scale 1:100.00
View Iso - Scale 1:141.39 Plot Scale 1:100.00
View Front - Scale 1:114.20 Plot Scale 1:100.00
View Right - Scale 1:85.75 Plot Scale 1:100.00

Fig. 190 – 3D plants inserted

The type of elevation/3D figure inserted by this option is controlled by the data in the database. Column C in the database, headed "*elev. figure name*", contains the file names of the elevation/3D figures to be used.

## Note

Appendix 1 – The LANDWorksCAD Plant Database contains more information on this.

The figures can be, as described, either a flat elevation representation of the plant or a full 3D model.

If the figures are drawn as flat elevations, they will appear as shown in the image above. Note how the plants are shown as simple, straight lines in the Top view (top, right window).

However, column K in the database, "*number of 2d figures*", can be used to make them look more 3D-like. The value in column K is the number of copies of the elevation figure that will be used. The default is one. Each copy is rotated evenly, thereby creating a 3D effect from a 2D drawing.

The table below shows plan and isometric views of a tree with varying number of 2d figures.

| No. of 2d figures | 1 | 2 | 3 | 4 |
|---|---|---|---|---|
| Plan view | | | | |
| Isometric view | | | | |

Fig. 191 – 3D Plant visualization depending on the number of 2D figures in plain view

If the figures are drawn as full 3D models, they will display appropriately in all views. There is definitely no need to have multiple copies, so column K, "*number of 2d figures*", should be set to one.

The image below shows an example of a simple 3D plant, in four different views – Top, ISO, Front and Right.

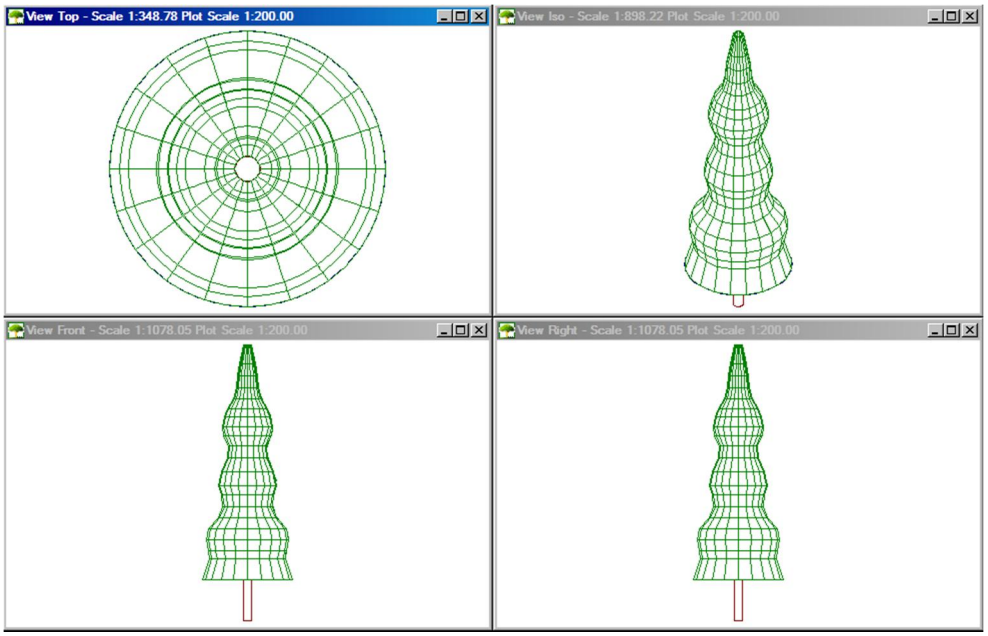

View Top - Scale 1:348.78 Plot Scale 1:200.00
View Iso - Scale 1:898.22 Plot Scale 1:200.00
View Front - Scale 1:1078.05 Plot Scale 1:200.00
View Right - Scale 1:1078.05 Plot Scale 1:200.00

Fig. 192 – Full 3D Tree model viewed from Top, ISO, Front and Right

## Tip

Another way of achieving a more 3D-like effect, without the overhead of multiple elevation figures or a full 3D model, is to use a single, flat elevation figure, but have it automatically "oriented to the view". This technique means it will always be displayed parallel to the screen no matter what view you are in or what rotation is applied to the view and thus it will look like a full plant; it will never turn on its side. This effect can be achieved by turning on the "Orient to View" setting in the Figure Options (select Figure → Options from the menu).

## Current Size

This option tells LANDWorksCAD to insert the plant figures at their current size, i.e., at the size they were drawn.

## Update Age

This option lets you control the size of the plants, based on their age. When this option is selected the "Age" box below it is activated, as shown below, letting you select the age at which you want to display the plants. Click on the down arrow at the end of the box to display a list of ages to select from. You can also type in the age.

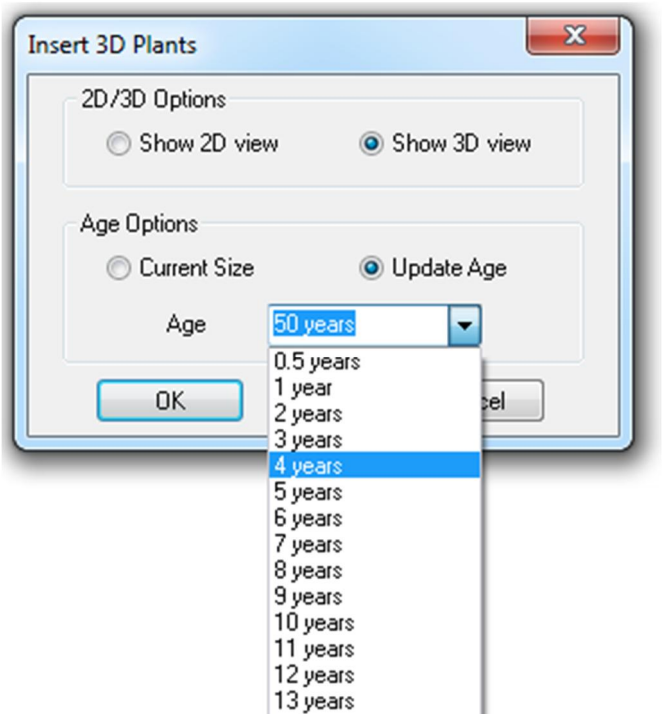



Fig. 193 – Update Age dropdown list

The resultant size of the plant is determined by the “Update Age” selected (above) and the plant’s maximum width, maximum height and maturity from the plant database.

The plant’s size is calculated as follows:

Age height = maximum height * age / maturity

Age width = maximum width * age / maturity

Obviously the maximum height, maximum width and maturity data must exist in the database before the “Update Age” option can work.

## Inserting the Plants

When the OK button is clicked, one of two things will happen:

1. If plants were selected before the command was run they will be processed as per the settings.
2. If no plants were selected before the command was run, the following dialog box will be displayed.

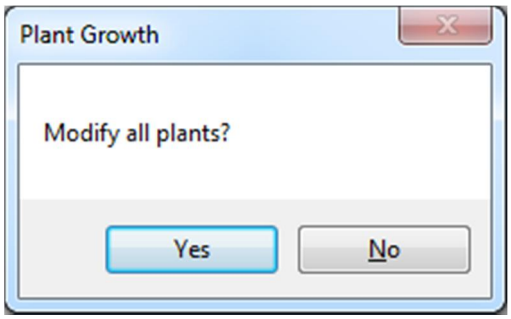



Fig. 194 – Modify All Plants confirmation dialog box

Click “Yes” to process all plants as per the settings or click “No” to cancel the command. You can then select only the plants that are to be processed and run the command again.

# Insert Sun Light



Insert Sun Light

Insert Sun Light inserts a light source in your model that represents the Sun.

When modelling in 3D, this light source can be used to generate shadows in a Raytraced view.

Fig. 195 – 3D Raytraced view

When the command is selected, the following dialog box is displayed.

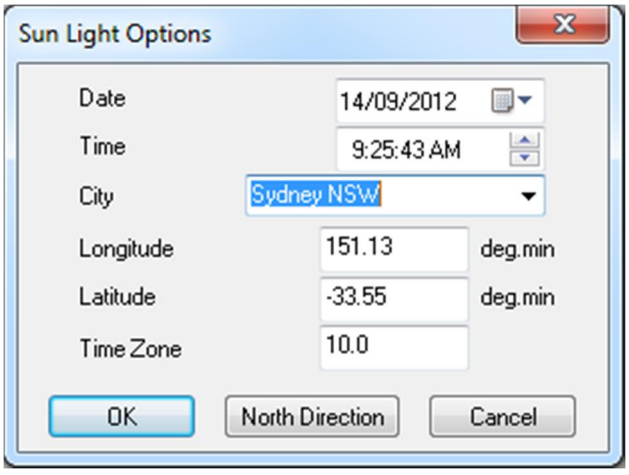



Fig. 196 – Insert Sun Light dialog box

The text below explains the options in this dialog box.

## Date

This box lets you choose the date that will be used to determine the location of the Sun.

The current date is automatically displayed, but it can be altered to suit your requirements.

Click on the triangle at the end of the box to display a calendar, as shown below. The controls for the calendar are indicated.

Click on the required date in the calendar to display it in the box.

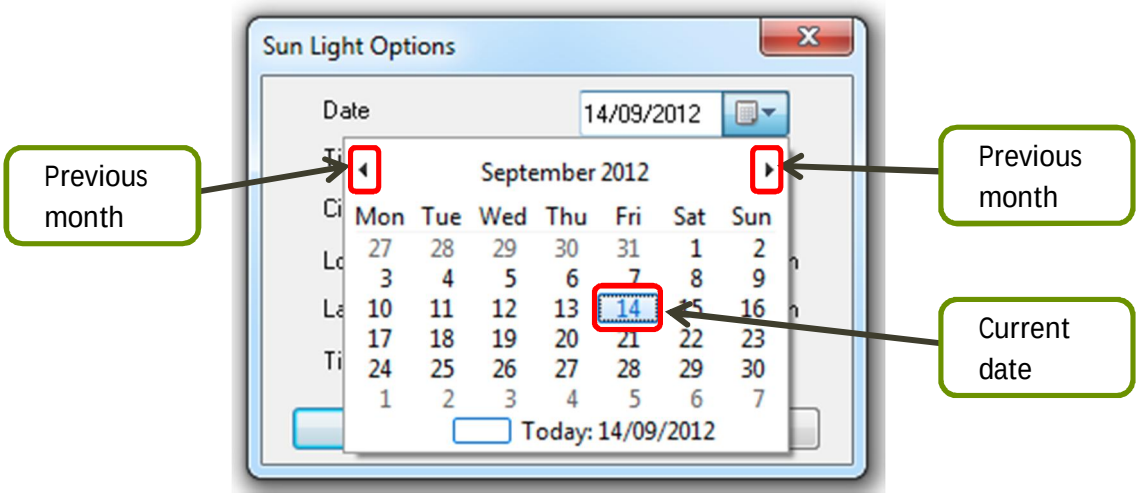

Sun Light Options
Date
14/09/2012
September 2012
Mon Tue Wed Thu Fri Sat Sun
27 28 29 30 31 1 2
3 4 5 6 7 8 9
10 11 12 13 14 15 16
17 18 19 20 21 22 23
24 25 26 27 28 29 30
1 2 3 4 5 6 7
Today: 14/09/2012
Previous month
Previous month
Current date

Fig. 197 – Selecting the date

### Note

The date can also be edited manually. Simply click on the number representing the day, date or year and type in the required number(s).

## Time

This box lets you choose the time of day that will be used to determine the location of the Sun.

The current time is automatically displayed, but it can be altered to suit your requirements.

The format of the time is *hour:minute:second AM/PM*.

To change the numeric part of the time, click on the number and then either:

- type in the new number, or
- click on the up and down spinners , as indicated below

To change the AM/PM part of the time, click on it then either:

- type A or P, or
- click on the up and down spinners , as indicated below

## Note

AM/PM will change automatically if you change the hour number such that you pass 12 noon or 12 midnight.

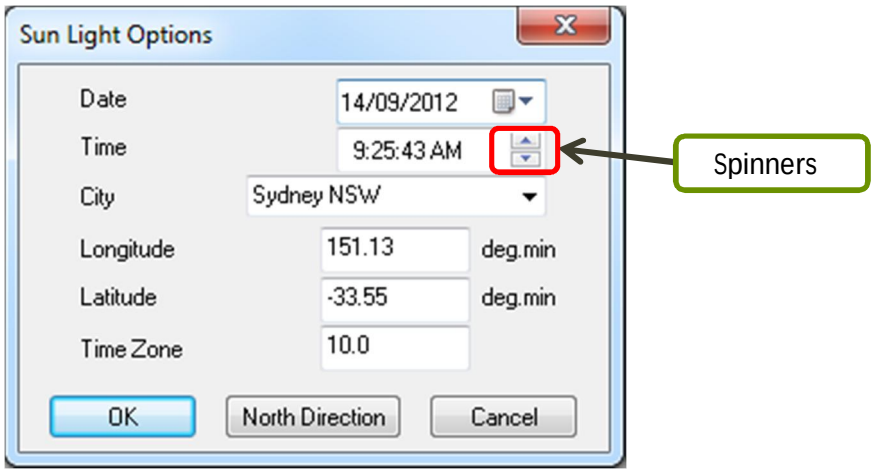



Fig. 198 – Selecting the time

## City

This box lets you choose the city that will be used to determine the position of the Sun.

Click on the triangle at the end of the box to display a list of cities, as shown below.

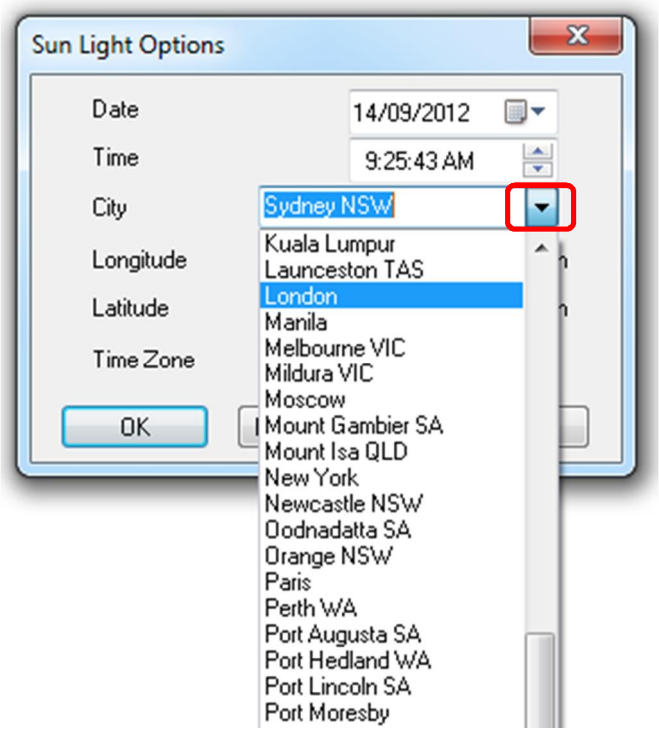



Fig. 199 – Selecting the City

You can scroll through the list to find the city you want or you can start typing in the name of the city. As you type in the name, the list will adjust to display cities that match what you have typed in, eg, if you type “m”, the list will adjust to display city names that begin with “m”.

Click on the required city name to display it in the box.

The city names are stored in a file called “cities.dat”, which can be found in your LANDWorksCAD folder. It is a simple text file and can be edited to suit your needs.

The format is as follows:

CityName,Longitude,Latitude,Time Difference from GMT,

(GMT = Greenwich Mean Time)

A sample extract is shown below.

- San Francisco,-122.27,37.45,-8.0,
- Seoul,127.00,37.30,9.0,
- Singapore,103.50,1.20,8.0,
- Sydney NSW,151.13,-33.55,10.0,
- Tennant Creek NT,134.11,-19.39,9.5,
- Tokyo,139.45,35.40,9.0,
- Townsville QLD,146.49,-19.16,10.0,
- Wagga Wagga NSW,147.22,-35.07,10.0,
- Winnipeg,-97.10,49.53,-6.0,
- Yulara NT,130.55,-25.10,9.5,

**Note**

Spaces are only allowed in the city name

## Longitude

This box automatically displays the longitude of the selected city.

**Note**

If for some reason the longitude is displayed incorrectly it can be edited. Simply click in the box and enter the correct value. The format of the longitude is degrees.minutes.

## Latitude

This box automatically displays the latitude of the selected city.

**Note**

If for some reason the latitude is displayed incorrectly it can be edited. Simply click in the box and enter the correct value. The format of the latitude is degrees.minutes.

## Time Zone

This box automatically displays the time difference from GMT of the selected city.

### Note

If for some reason the time zone is displayed incorrectly it can be edited. Simply click in the box and enter the correct value.

## Inserting the Sun

When the OK button is clicked a light entity is inserted into the model at an appropriate height and orientation to represent the Sun. No further user input is required.

The light entity looks like a small cone, similar to the image shown below.

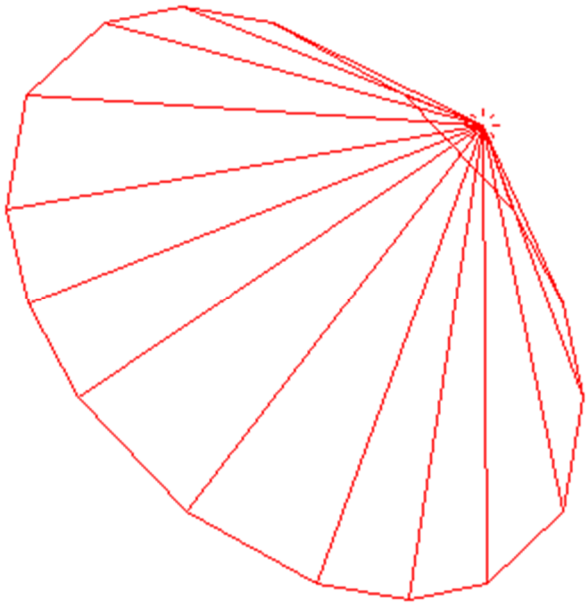


Fig. 200 – Sun Light figure

## North Direction Button

The Y axis (as indicated by the workplane icon) is assumed to be pointing north, however the "North Direction" button lets you specifically define north by inserting a north figure, as shown below. The orientation of this north figure will influence the location of the Sun in the drawing.

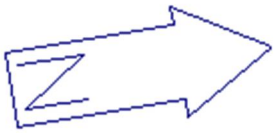


Fig. 201 – North Figure

You are first prompted for the origin (position) of the figure; left click once to define this.

You are then prompted for the direction of the figure. A rubber band is displayed between the origin point and your crosshair to help you. Left click again to indicate the direction of north and the figure is inserted.

### Note

If the north direction is changed after the Sun has been inserted, the Sun must be re-inserted.

Deleting the north figure is effectively the same as changing it. North will have been reset to match the Y axis, so the Sun must be re-inserted.

The default north point figure is just that; a LANDWorksCAD figure, and can therefore be changed if you don't like it.

It is a file called *NorthDirection.cad* and can be found in your LANDWorksCAD folder.

To change it, simply open the file, edit it and save it. Alternatively you can draw your own north point figure from scratch and save it as *NorthDirection.cad* in your LANDWorksCAD folder.

If you have already inserted the north point in a drawing, the drawing must be saved and re-opened to see the new version.

### Note

The north point figure must be called NorthDirection.cad and it must reside in C:\Program Files\LANDWorksCAD-v6 folder.

# About

## About

About shows the version number and release date of your LANDWorksCAD software.

When the command is selected, a dialog box similar to the following is displayed:

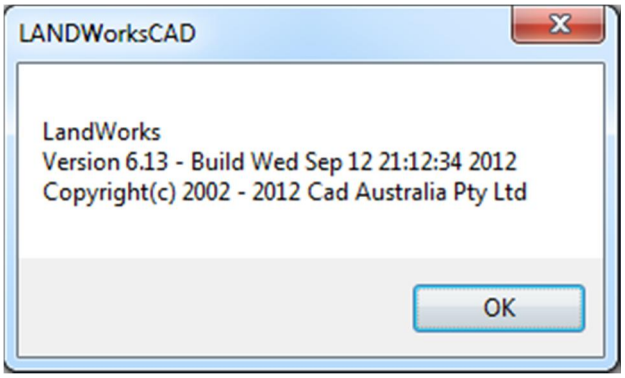



Fig. 202 – LANDWorksCAD About dialog box

If a CAD International support person asks you what version of LANDWorksCAD you are using, this is where you find it. When reporting your version it is important to also include the date.

# Appendices

The following appendices provide information about the LANDWorksCAD database that is useful to know, but not essential for day to day use of the software.

# Appendix 1 – The LANDWorksCAD Plant Database

## Structure

The LANDWorksCAD database of plants is a Microsoft Excel spread sheet file called LANDWorksPlantDatabase.xls. It must be called this name and it must be stored in the LANDWorksCAD folder on your computer's hard disk.

The LANDWorksCAD plant database contains three worksheets:

- one for existing plants
- one for concept plants
- one for plants

The Existing Plants worksheet lets you set up simple figures to represent the plants that already exist in your projects.

The Concept Plants worksheet lets you set up simple figures to use when creating a concept plan for your clients.

The Plants worksheet is where you store all the plant information related to existing & proposed plants. The information is used for labelling the existing and proposed plants as well as creating schedules & legends. Concept plants are labelled differently.

## Format

The format of the worksheets is quite simple:

- Each row in the database contains data that relates to a single plant only, e.g., row 32 contains data for the plant called "Abies grandis".
  *Exceptions to this "rule" are explained below.*
- Each column contains a particular type of data for each plant, e.g., column N contains the botanical name of each plant.

### Note

Excel functionality used within the database is noted where appropriate, but is not necessarily explained fully in this document. For more information consult the Excel Help files or contact us.

## Rows

The format of the rows is identical for each worksheet and is as follows:

| | | |
|---|---|---|
| Row 1 | – | is used for section headings, e.g., “CAD Data”, “Names”, “General Appearance”, “Leaves”, etc. |
| Rows 2-27 | – | are used to provide selection data for row 32 and higher numbered rows, where required. |
| Row 28 | – | is used to repeat the section headings from Row 1. This is done to make it easier to identify where you are in the spread sheet when freezing rows (Excel functionality). |
| Row 29 | – | is used for specific data headings, e.g., “plan figure name”, “Botanical Name”, “Habit”, etc. |
| Rows 30, 31 | – | are not used, but do not delete them. |
| Rows 32 and higher | – | contain the plant data. |

Rows 1-27, 30 and 31 are initially hidden in the supplied database. This is to prevent users from accidentally, or intentionally, editing the data contained in these rows before they really know what the data is for! These rows can, however, be displayed without affecting the functionality of the database in any way. For instructions on displaying these hidden rows refer to Appendix 3 – Working with the Selection Data.

Some row constraints of the database you should be aware of are:

1. You must not add or delete rows within rows 1-31.
2. The plant data must start in row 32 and continue in higher numbered rows, i.e., rows 33, 34, 35 …. 99, 100, 101 … 1000, 1001, etc.
3. There must be no blank rows in the plant data, i.e., row 32 and higher numbered rows. A blank row is taken to be the end of the plant list.

Some row freedoms of the database you should be aware of are:

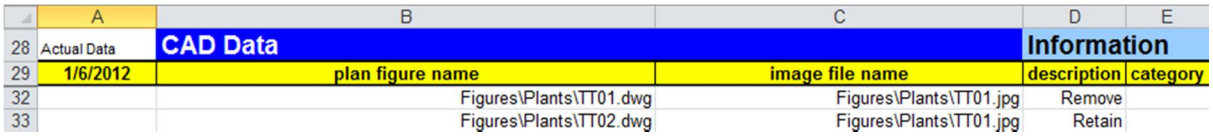
1. In the plant data area of the worksheets, i.e., row 32 & higher numbered rows, you can add as many rows as you need, delete rows, move rows, virtually anything you want.
2. You can add to and/or edit the selection data contained in rows 2-27. This is explained in Appendix 3 – Working with the Selection Data.
3. The data headings in row 29 (columns L-BX only) can be edited to suit your needs. The words can be changed completely; they can be changed to be all capitals, etc.

## Columns

The format of the columns is similar, but not identical, for each worksheet.

## Existing Plants worksheet

The Existing Plants worksheet contains 5 columns of data, as shown below.



| | A | B | C | D | E |
|---|---|---|---|---|---|
| 28 | Actual Data | CAD Data | | Information | |
| 29 | 1/6/2012 | plan figure name | image file name | description | category |
| 32 | | Figures\Plants\TT01.dwg | Figures\Plants\TT01.jpg | Remove | |
| 33 | | Figures\Plants\TT02.dwg | Figures\Plants\TT01.jpg | Retain | |

Fig. 203 – Existing Plants Worksheet Screenshot

The use of the columns is explained below.

Column A – is not used at present. You should not remove it, but can use it for notes, comments, etc.

*CAD Data*

Column B – Plan Figure Name – defines the CAD drawing file that will be used to represent the existing plant when displaying the plants normally in plan view.

Column C – Image File Name – defines the image file (bmp or jpg format) that will be used to represent the existing plant when displaying the plants for presentation purposes in plan view.

*Information*

Column D – Description – describes the plant. The description for each plant must be unique.

Column E – Category – defines the category of your existing plant.

If you click in a cell a small box will appear showing the column heading and a short description of what the data in the cell is used for. An example is shown below.

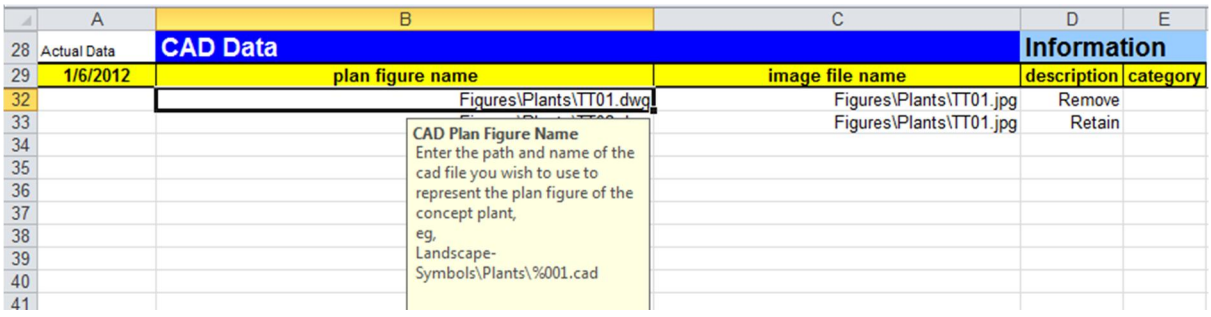



Fig. 204 – Existing Plants Tooltip box

Some column constraints of this worksheet you should be aware of are:

1. You must not add, delete or move columns within columns A-C.
2. You must not edit in any way the headings in row 29 for columns A-C.
3. The plant data must exist in columns D and E.

Some column freedoms of this worksheet you should be aware of are:

1. In the plant data area of the worksheet, i.e., columns D and E, you can add columns, delete columns and move columns.
2. Data in the columns can be sorted in any order you require, e.g., it can be sorted by plan figure name, by description, etc. Appendix 4 – Sorting the Plant Database in Excel explains how to do this.

## Concept Plants worksheet

The Concept Plants worksheet contains 10 columns of data, as shown below.

| | A | B | C | D | E |
|---|---|---|---|---|---|
| 28 | Actual Data | **CAD Data** | | | |
| 29 | 1/6/2012 | **plan figure name** | **elev. figure name** | **image file name** | **elev. image file name** |
| 32 | | Figures\Plants\RR01.dwg | | | |
| 33 | | Figures\Plants\RR02.dwg | | | |
| 34 | | Figures\Plants\RR03.dwg | | | |
| 35 | | Figures\Plants\RR04.dwg | | | |
| 36 | | Figures\Plants\RR05.dwg | Figures\Plants-E\BE023-E.dwg | Figures\Plants\M005.jpg | Figures\Plants-E\MM034-E.jpg |

| | F | G | H | I | J |
|---|---|---|---|---|---|
| 28 | **Concept Information** | | | | |
| 29 | **description** | **category** | **shape** | **heading** | **label** |
| 32 | Desc 1 | Tree | Round | Heading 1 | Label 1 |
| 33 | Desc 2 | Tree | Oval | Heading 2 | Label 2 |
| 34 | Desc 3 | Shrub | Round | Evergreen | Label 3 |
| 35 | Desc 4 | Tall shrub | Spikey | Desert Shrub | Label 4 |

Fig. 205 – Concept Plants Worksheet

The use of the columns is explained below.

Column A – is not used at present. You should not remove it, but can use it for notes, comments, etc.

*CAD Data*

Column B – Plan Figure Name – defines the CAD drawing file that will be used to represent the concept plant when displaying the plants normally in plan view.

Column C – Elev. Figure Name – defines the CAD drawing file that will be used to represent the concept plant when displaying the plants normally in a non-plan, i.e., 3D, views.

Column D – Image File Name – defines the image file (bmp or jpg format) that will be used to represent the concept plant when displaying the plants for presentation purposes in plan view.

Column E – Elev. Image File Name – defines the image file (bmp or jpg format) that will be used to represent the concept plant when displaying the plants for presentation purposes in non-plan, i.e., 3D, views.

*Concept Information*

Column F – Description – describes the plant. The description for each plant must be unique.

Column G – Category – defines the category of the concept plant. Select from a list.

Column H – Shape – defines the general shape of the concept plant. Select from a list.

Column I – Heading – defines a heading that can be semi-automatically added to the drawing, with the label (see below), to identify your plant.

Column J – Label – defines a label that can be semi-automatically added to the drawing, with the heading (see above), to identify your plant.

If you click in a cell a small box will appear showing the column heading and a short description of what the data in the cell is used for. An example is shown below.

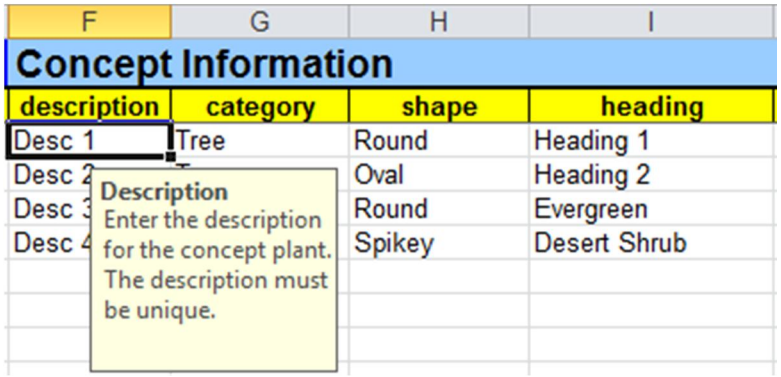



Fig. 206 – Concept Plants Tooltip box

Some column constraints of the database you should be aware of are:

1. You must not add, delete or move columns within columns A-E.
2. You must not edit in any way the headings in row 29 for columns A-E.
3. The plant data must start in column F and continue in higher lettered columns, i.e., columns G, H, etc.

Some column freedoms of the database you should be aware of are:

1. In the plant data area of the worksheet, i.e., columns E and higher, you can add columns, delete columns and move columns.
2. Data in the columns can be sorted in any order you require, e.g., it can be sorted by Description, by Category, etc. Appendix 4 – Sorting the Plant Database in Excel explains how to do this.

## Plants worksheet

The Plants worksheet contains 78 columns of data, some of which are shown below.

| | L | M | N | O | P | Q |
|---|---|---|---|---|---|---|
| 28 | **Names** | | | | | |
| 29 | **abbreviation** | **abbreviation-2** | **botanical name** | **family** | **common name** | **common name 2** |
| 32 | Ab x Gr | Abe x Gra | Abelia X Grandiflora | Caprifoliaceae | Glossy Abelia | |
| 33 | Ab x Gr Na | Abe x Gra Nan | Abelia X Grandiflora 'Nana' | Caprifoliaceae | Dwarf Abelia | |
| 34 | Ab x Gr Su | Abe x Gra Sun | Abelia X Grandiflora 'Sunrise' | Caprifoliaceae | Dwarf Pink variegated Abelia | |
| 35 | Ab x Gr Va | Abe x Gra Var | Abelia X Grandiflora 'Variegata' | Caprifoliaceae | Pink | cream variegated Abelia |
| 36 | Ab Gr | Abi Gra | Abies Grandis | Pinaceae | Grand Fir | Giant Fir |

Fig. 207 –Plants Worksheet (Proposed Plants)

The use of the columns is explained below.

Column A – is not used at present. You should not remove it, but can use it for notes, comments, etc.

*CAD Data*

Column B – Plan Figure Name – defines the basic 2D CAD drawing file that will be used to represent the proposed plant when displaying the plants normally in plan view.

Column C – Elev. Figure Name – defines the basic 2D CAD drawing file that will be used to represent the proposed plant when displaying the plants normally in a non-plan, i.e., 3D, view.

Column D – Shadow Figure Name – defines the 2D shadow image for the plant.

Column E – 3D Figure Name – is no longer used, but the column must not be deleted.

Column F – Image File Name – defines the image file (bmp or jpg) that will be used to represent the proposed plant when displaying the plants for presentation purposes in plan view.

Column G – Detail Plan Figure Name – defines the more detailed 2D CAD drawing file that will be used to represent the proposed plant when displaying the plants normally in plan view.

Column H – Detail Elev. Figure Name – defines the more detailed 2D CAD drawing file that will be used to represent the proposed plant when displaying the plants normally in a non-plan, i.e., 3D, views.

Column I – Elev. Image File Name – defines the image file (bmp or jpg) that will be used to represent the proposed plant when displaying the plants for presentation purposes in non-plan, i.e., 3D, views.

Column J – Line Type – is not used at present. You should not remove it because it is reserved for future development.

Column K – Hatch Pattern – is not used at present. You should not remove it because it is reserved for future development.

Column L – Number of 2d Figures – defines the number of 2D elevation figures you want to be used to generate a more 3D looking plant. The section called Show 3D View on page 130 explains how this data is used.

*Names*

Column M – Abbreviation – defines the abbreviated name of the plant. This can be any format.

Column N – Abbreviation-2 – defines a second abbreviated name of the plant, if required. This can be any format.

Column O – Botanical name – defines the Botanical name of the plant. The botanical name must be unique.

Column P – Family – defines the Family the plant belongs to.

Column Q – Common Name – defines the Common Name of the plant.

Column R – Common Name 2 – defines the secondary Common Name of the plant, if there is one.

Column S – Cultivars – defines the Cultivars of the plant.

*Favourites*

Column T – Favourites – defines if the plant is one your favourites. Select Yes or No from a list.

Column U – Palettes – defines the palettes which the plants belongs to (if applicable).

*Type*

Column V – Type – defines the type of plant. Select from a list.

*General Appearance*

Column W – Habit – defines the growth habit of the plant. Select from a list.

Column X – Texture – defines the overall texture of the plant. Select from a list.

Column Y – Maximum Width – defines the maximum width the plant will grow to if planted in your region in typical conditions. Measured in millimetres (mm).

Column Z – Maximum Height – defines the maximum height the plant will grow to if planted in your region in typical conditions. Measured in millimetres (mm).

Column AA – Maturity Age – defines the age, in years, when the plant will typically be mature.

Column AB – Density – defines the density of the plant. Select from a list.

Column AC – Roots – defines the root structure of the plant. Select from a list.

Column AD – Seasonal – defines the seasonal nature of the plant. Select from a list.

*Leaves*

Column AE – Leaf Size – defines the leaf size of the plant. Select from a list.

Column AF – Leaf Character – defines the leaf character of the plant. Select from a list.

Column AG – Leaf Colour – defines the leaf colour of the plant. Select from a list.

Column AH – Autumn/Fall Leaf Colour – defines the leaf colour of the plant in Autumn/Fall. Select from a list.

*Flower*

Column AI – Flowers Season – defines the dominant flowering season of the plant. Select from a list.

Column AJ – Flower Type – defines the type of flower of the plant. Select from a list.

Column AK – Months of Bloom – defines the typical month(s) of bloom of the plant. Select from a list.

Column AL – Flower Colour – defines the typical flower colour of the plant. Select from a list.

*Fruit*

Column AM – Fruit Type – defines the type of fruit of the plant. Select from a list.

Column AN – Fruit Size – defines the size of the fruit of the plant. Select from a list.

Column AO – Fruit Season – defines the typical fruiting season of the plant. Select from a list.

Column AP – Edible – defines the edibility of the fruit of the plant. Select from a list.

Column AQ – Fruit Colour – defines the colour of the fruit of the plant. Select from a list.

*Bark*

Column AR – Bark Colour – defines the colour of the bark of the plant. Select from a list.

Column AS – Bark Texture – defines the texture of the bark of the plant. Select from a list.

Column AT – Bark Shedding – defines if the bark of the plant sheds or not. Select from a list.

*Region*

Column AU – Global Origin – defines the global origin of the plant. Select from a list.

Column AV – Bioclimatic Zone – defines the bioclimatic zone of the plant. Select from a list.

Column AW – Zone Number – defines the zone number of the plant. Select from a list.

Column AX – Climate Group – defines the climate group of the plant. Select from a list.

*Typical Style*

Column AY – Style – defines the style of the plant. Select from a list.

Column AZ – Interest – defines the seasonal interest of the plant. Select from a list.

Column BA – Design Accent – defines the design accent of the plant. Select from a list.

*Uses*

Column BB – Location Uses – defines the typical location where the plant is used. Select from a list.

Column BC – Special Uses – defines any special uses for the plant. Select from a list.

Column BD – Attracts – defines what the plant attracts. Select from a list.

*Position*

Column BE – Sun – defines the type of sun/shade the plant likes. Select from a list.

Column BF – Tolerances – defines what the plant is tolerant to. Select from a list.

Column BG – Soil Type – defines the preferred soil type for the plant. Select from a list.

Column BH – Soil pH – defines the preferred soil pH for the plant. Select from a list.

Column BI – Soil Condition – defines the preferred soil condition for the plant. Select from a list.

Column BJ – Hydrozone – defines the preferred hydrozone for the plant. Select from a list.

*Maintenance*

Column BK – Maintenance Rating – defines the maintenance rating for the plant. Select from a list.

Column BL – Water – defines the water requirements of the plant. Select from a list.

Column BM – Pruning – defines how often the plant should be pruned. Select from a list.

Column BN – Fertilization – defines the type of fertilizer required for the plant. Select from a list.

Column BO – Integrated Pest Management – defines the type of pest management required for the plant.

Column BP – Watering Option 1 – defines how often the plant should be watered. Select from a list.

Column BQ – Watering Option 2 – defines additional information on how the plant should be watered.

*Problems*

Column BR – Susceptibilities – defines any susceptibilities the plant has. Select from a list.

Column BS – Adverse Factors – defines any adverse factors relating to the plant. Select from a list.

*Miscellaneous*

Column BT – Description Text – describes the plant with information not included in the other columns.

Column BU – Description 2 – additional or alternative text to describe the plant.

Column BV – Nursery ID 1 – defines the nursery ID or code used to identify the plant.

Column BW – Container Size – defines the container size for the plant. Select from a list.

*Costing*

Column BX – Price 1 – defines the main price of the plant.

Column BY – Price 2 – defines an alternative price of the plant.

Column BZ – Price 3 – defines a second alternative price of the plant.

If you click in a cell a small box will appear showing the column heading and a short description of what the data in the cell is used for. An example is shown below.

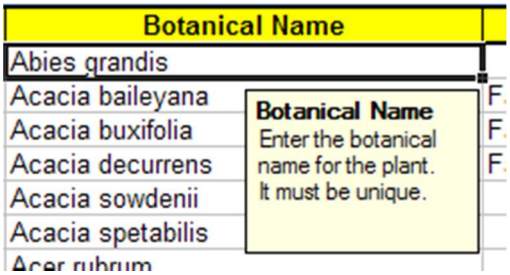



Fig. 208 –Plants Tooltip box

Some column constraints of the database you should be aware of are:

1. You must not add, delete or move columns within columns A-K.
2. You must not edit in any way the headings in row 29 for columns A-K.
3. The plant data must start in column L and continue in higher lettered columns, ie, columns M, N, O, etc.

Some column freedoms of the database you should be aware of are:

1. In the plant data area of the worksheet, i.e., columns L and higher, you can add columns, delete columns and move columns.
2. Data in the columns can be sorted in any order you require, e.g., it can be sorted by botanical name, by type, etc. Appendix 4 – Sorting the Plant Database in Excel explains how to do this.

# Appendix 2 – Editing the Plant Database in Excel

The plant database can be edited from within LANDWorksCAD or directly in Microsoft Excel. This appendix explains how to edit the database directly in Excel.

The explanations apply to the concept, existing and proposed plants.

The explanations assume basic knowledge of Excel.

## Editing Existing Plant Data

Editing the database is as simple as opening it in Excel and entering the appropriate data. Each row pertains to a particular plant. Save the file and the next time you open LANDWorksCAD or reload the database the new data will be available.

For the plant data, i.e., columns L–BX, simply type in the relevant data or select it from the available drop down lists.

For the CAD data, i.e., columns B–H, you must type in the path and file name of the figure/image to be used to represent the plants.

If the file is saved in a folder below the LANDWorksCAD folder, the path can start with the folder directly below the LANDWorksCAD folder, e.g., "Figures\Plants\ …"

If the file is not saved in a folder below the LANDWorksCAD folder, the path must start from the root folder, e.g., "C:\Acme Landscaping\Plant Library\ …"

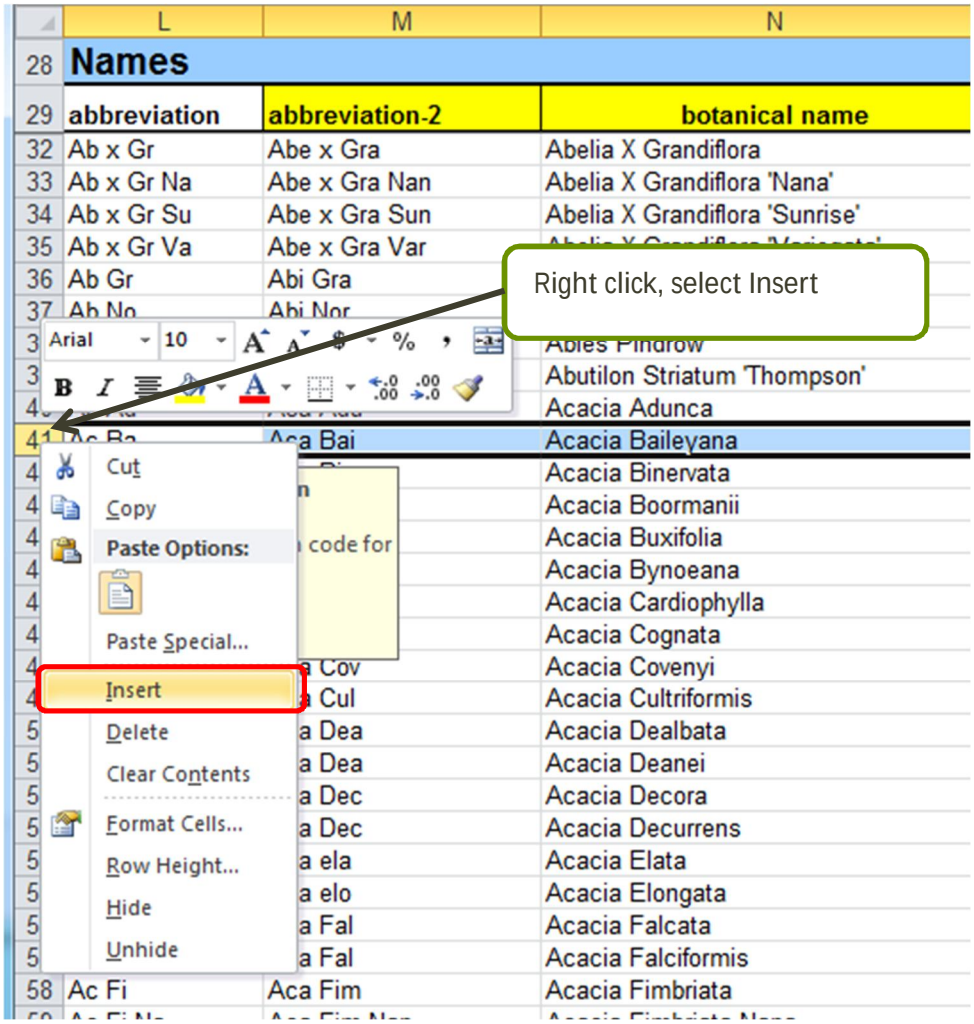
*Note: The file name must include its extension, i.e., ".cad", etc.*

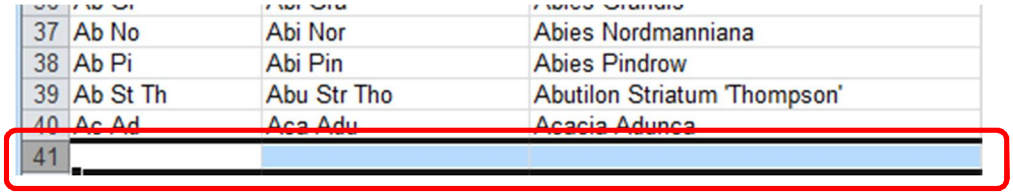
## Adding a Plant

To add a new plant, simply insert a new row and enter the appropriate data.

### Tip

To insert a new row in Excel, right click in any of the row numbers on the left side of the screen then select Insert as shown below.



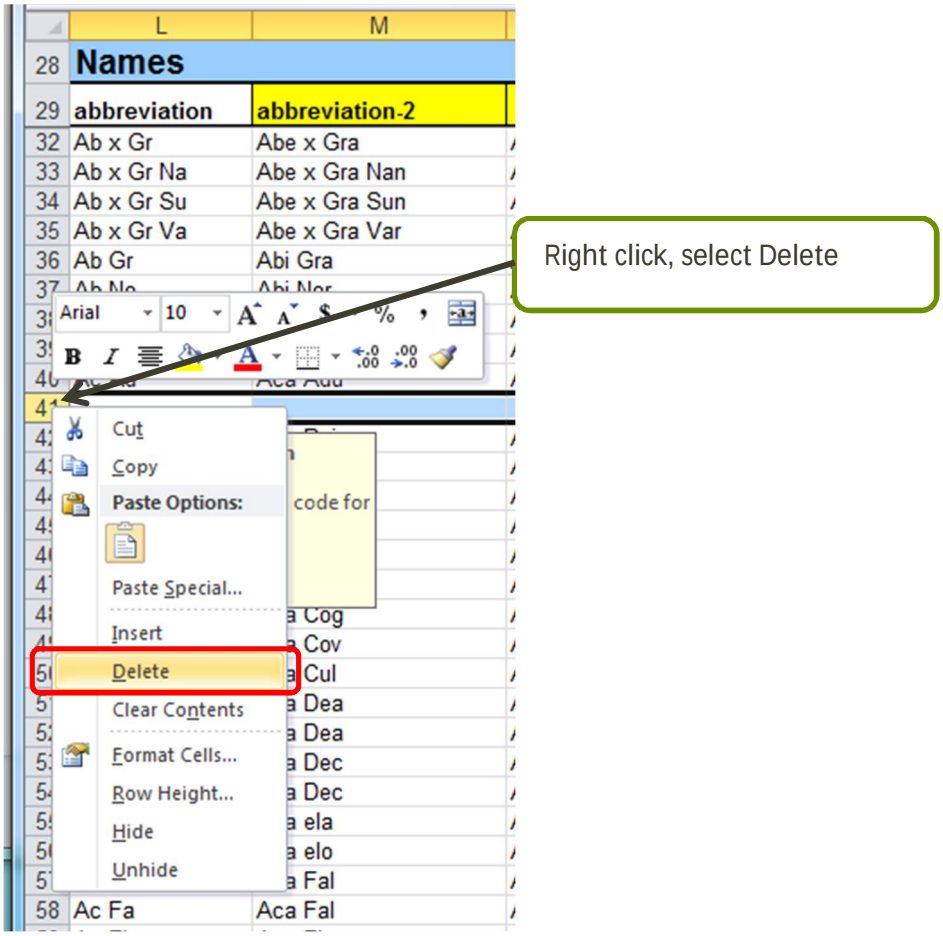



## Deleting a Plant

To delete an existing plant, simply delete the row.

### Tip

To delete a row in Excel, right click in any of the row numbers on the left side of the screen then select Delete as shown below.



## Re-Arranging/Moving Plants

Any rows from 32 on can be re-arranged or moved to suit your requirements.

**Tip**

When re-arranging/moving plants ensure the entire row is selected, not just the visible cells.

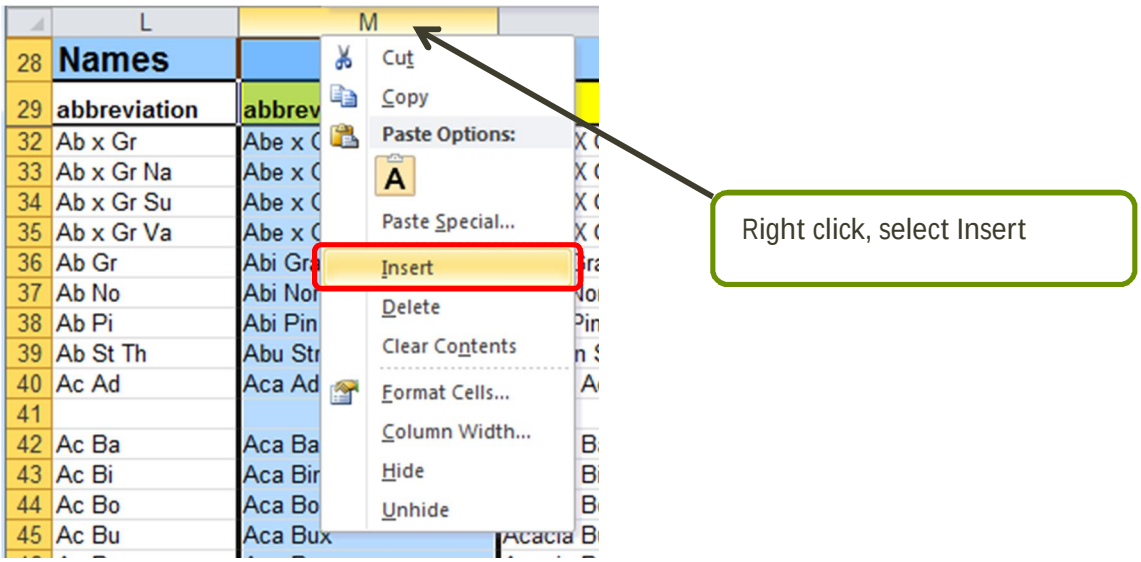
The basic steps to move a plant are: 1) insert a new row where you want to move the plant and 2) cut and paste the existing row to the new position. For more details, please refer to the Excel Help system.

## Adding a New Data Item (Column)

To add a new item of data for the plants, simply insert a new column, give it a heading in row 29 and then enter the appropriate data for each plant.

**Tip**

To insert a new column in Excel, right click in any of the column names then select Insert.

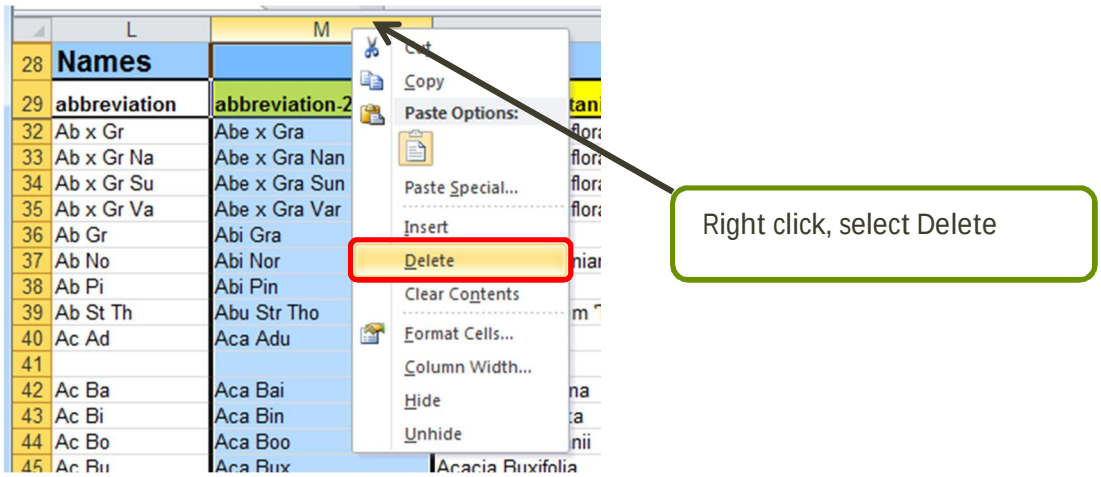


## Deleting an Existing Data Item (Column)

To delete an existing data item, simply delete the column.

### Tip

To delete a new column in Excel, right click in any of the column names then select Delete.




## Re-Arranging/Moving Data Items (Columns)

Any data items (columns), except those in the CAD data section (columns A – K) can be re-arranged or moved to suit your requirements.

### Tip

When re-arranging/moving data items ensure the entire column is selected, not just the visible cells.

The basic steps to move a column are: 1) insert a new column where you want to move the data item and 2) cut and paste the existing column to the new position. For more details, please refer to the Excel Help system.

# Appendix 3 – Adding Plants to the Database

You can also add new plants to your LANDWorksCAD plant database.

LANDWorksCAD v.6 contains three worksheets:

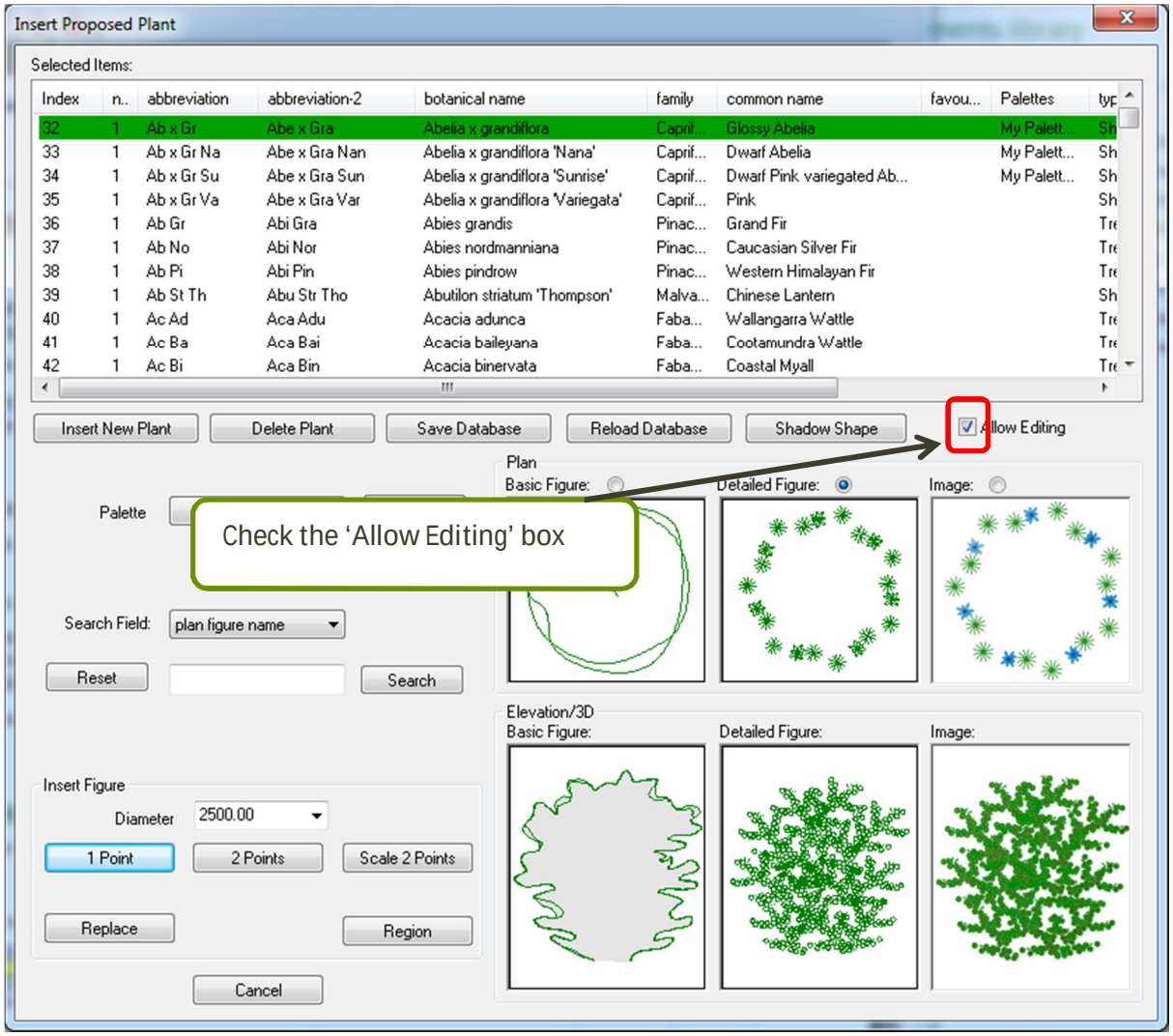
- Existing Plants
- Concept Plants
- Plants (Proposed Plants)

There are two different ways to add new plants to your plant database.

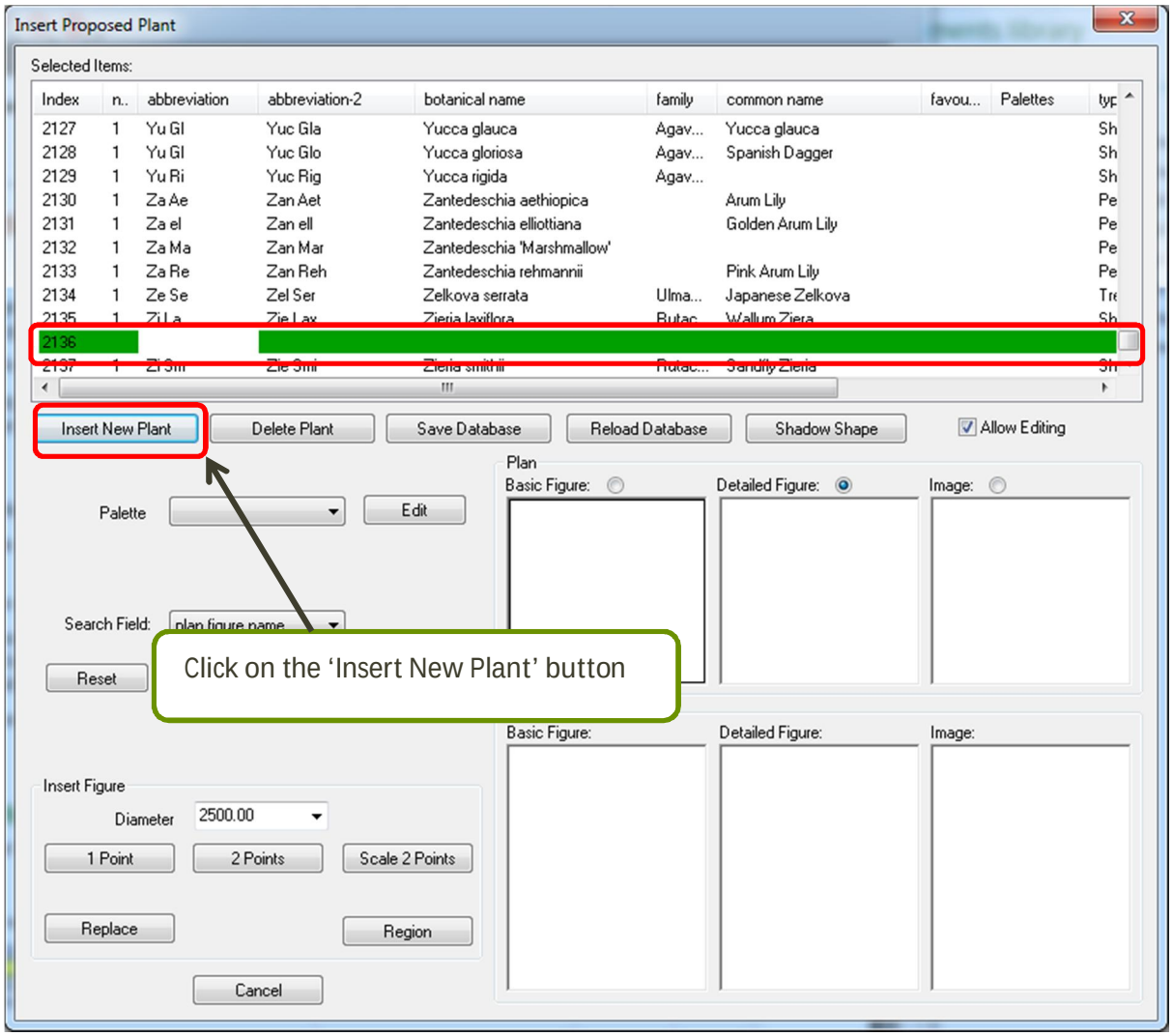
## Directly from LANDWorksCAD

In this example we will add a new proposed plant to the plant database.

Click on the 'Insert Proposed Plants' command then check the 'Allow Editing' checkbox


Insert Proposed Plant
Selected Items:
Index n.. abbreviation abbreviation-2 botanical name family common name favou... Palettes typ
32 1 Ab x Gr Abe x Gra Abelia x grandiflora Caprif... Glossy Abelia My Palett... Sh
33 1 Ab x Gr Na Abe x Gra Nan Abelia x grandiflora 'Nana' Caprif... Dwarf Abelia My Palett... Sh
34 1 Ab x Gr Su Abe x Gra Sun Abelia x grandiflora 'Sunrise' Caprif... Dwarf Pink variegated Ab... My Palett... Sh
35 1 Ab x Gr Va Abe x Gra Var Abelia x grandiflora 'Variegata' Caprif... Pink Sh
36 1 Ab Gr Abi Gra Abies grandis Pinac... Grand Fir Tre
37 1 Ab No Abi Nor Abies nordmanniana Pinac... Caucasian Silver Fir Tre
38 1 Ab Pi Abi Pin Abies pindrow Pinac... Western Himalayan Fir Tre
39 1 Ab St Th Abu Str Tho Abutilon striatum 'Thompson' Malva... Chinese Lantern Sh
40 1 Ac Ad Aca Adu Acacia adunca Faba... Wallangarra Wattle Tre
41 1 Ac Ba Aca Bai Acacia baileyana Faba... Cootamundra Wattle Tre
42 1 Ac Bi Aca Bin Acacia binervata Faba... Coastal Myall Tre
Insert New Plant
Delete Plant
Save Database
Reload Database
Shadow Shape
Allow Editing
Check the 'Allow Editing' box
Palette
Search Field:
plan figure name
Reset
Search
Plan
Basic Figure:
Detailed Figure:
Image:
Elevation/3D
Basic Figure:
Detailed Figure:
Image:
Insert Figure
Diameter
2500.00
1 Point
2 Points
Scale 2 Points
Replace
Region
Cancel

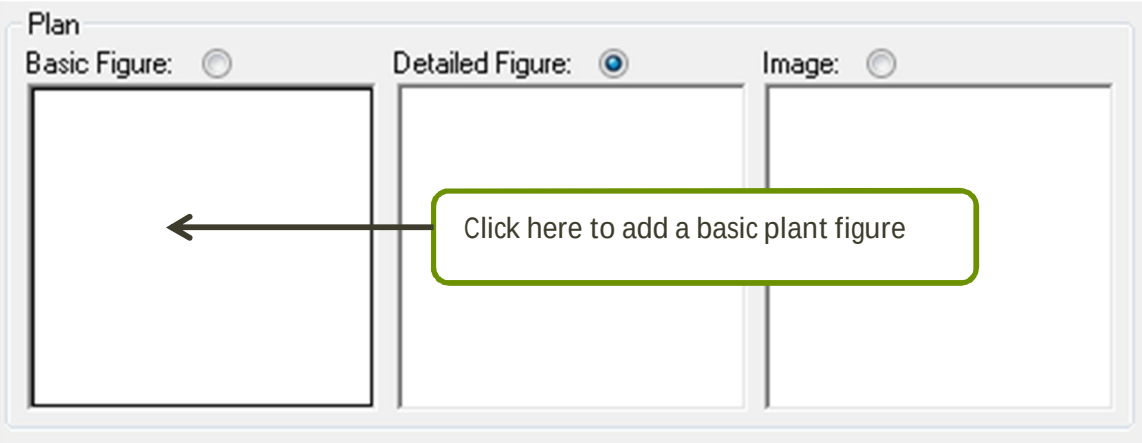
The Insert New Plant button will be active. Clicking on that button will add a new row where you can insert the new plant information.


Insert Proposed Plant
Selected Items:
Index n.. abbreviation abbreviation-2 botanical name family common name favou... Palettes typ
2127 1 Yu Gl Yuc Gla Yucca glauca Agav... Yucca glauca Sh
2128 1 Yu Gl Yuc Glo Yucca gloriosa Agav... Spanish Dagger Sh
2129 1 Yu Ri Yuc Rig Yucca rigida Agav... Sh
2130 1 Za Ae Zan Aet Zantedeschia aethiopica Arum Lily Pe
2131 1 Za el Zan ell Zantedeschia elliottiana Golden Arum Lily Pe
2132 1 Za Ma Zan Mar Zantedeschia 'Marshmallow' Pe
2133 1 Za Re Zan Reh Zantedeschia rehmannii Pink Arum Lily Pe
2134 1 Ze Se Zel Ser Zelkova serrata Ulma... Japanese Zelkova Tr
2136
Insert New Plant
Delete Plant
Save Database
Reload Database
Shadow Shape
Allow Editing
Plan
Basic Figure:
Detailed Figure:
Image:
Palette
Edit
Search Field:
plan figure name
Reset
Click on the 'Insert New Plant' button
Insert Figure
Diameter
2500.00
1 Point
2 Points
Scale 2 Points
Replace
Region
Cancel

Type-in the new plant information, abbreviation, botanical name and so on... on the empty row. Use your mouse to move between columns.

2133 1 Za Re Zan Reh Zantedeschia rehmannii Pink Arum Lily Pe
2134 1 Ze Se Zel Ser Zelkova serrata Ulma... Japanese Zelkova Tr
2135 1 Zi La Zie Lax Zieria laxiflora Rutac... Wallum Ziera Sh
2136 Test Test Proposed Plant Test
2137 1 Zi Sm Zie Smi Zieria smithii Rutac... Sandfly Zieria Sh

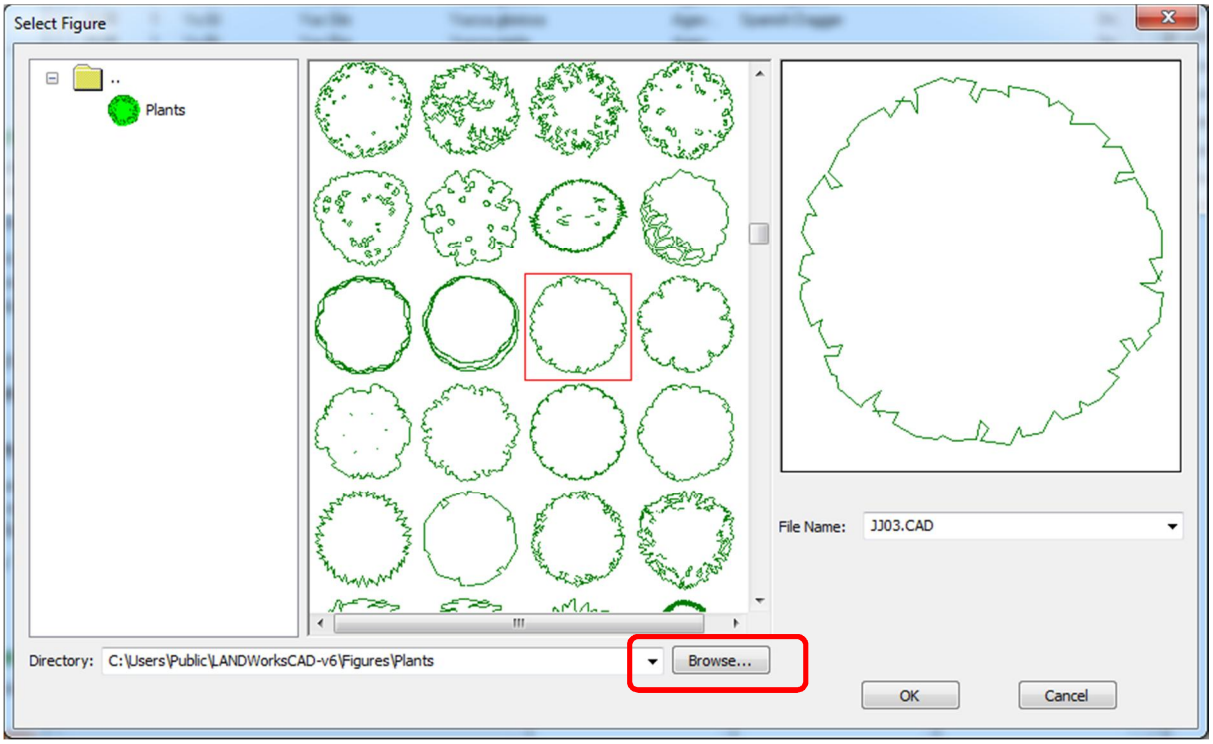
Next, click on any of the empty boxes to add the basic, detailed and image figures for the plant as a Plan and Elevation.




In the example above, click on the Plan Basic Figure box to add a new plant figure.

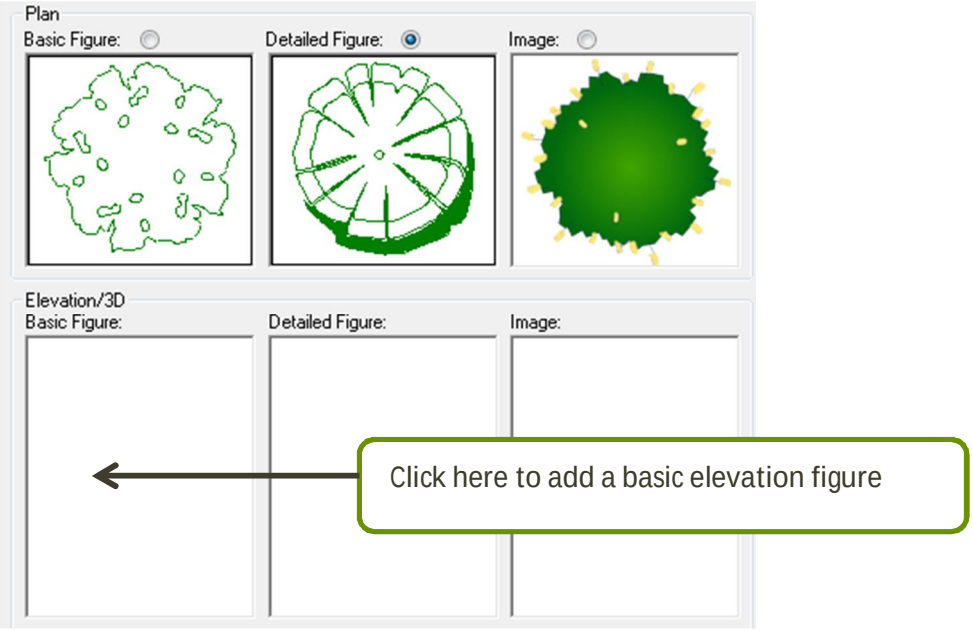
LANDWorksCAD by default will browse the Plan figures under:

- C:\Users\Public\LANDWorksCAD-v6\Figures\Plants (Windows Vista, 7 and 8)
- C:\Documents and Settings\All Users\LANDWorksCAD-v6\Figures\Plants (Windows XP)



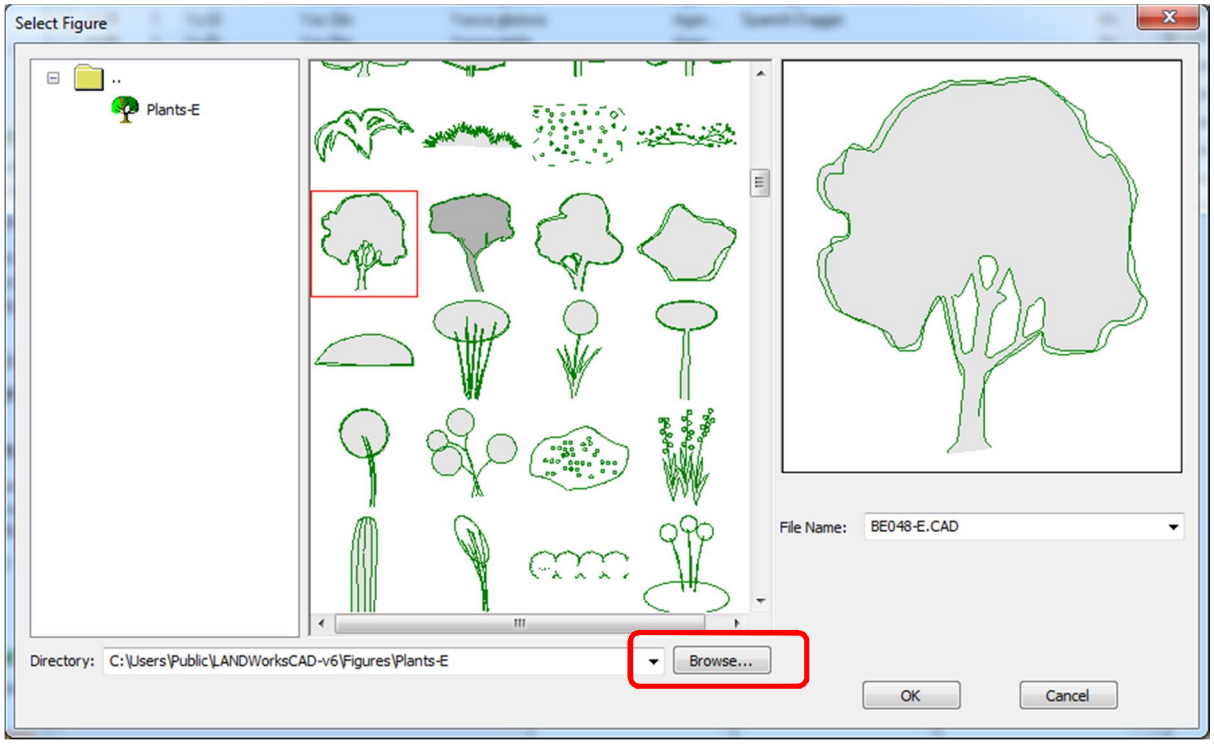

You can browse to a different directly by clicking on the Browse... button.

Once you have selected your Plan view basic, detailed and image figures, repeat the same steps for Elevation/3D figures.



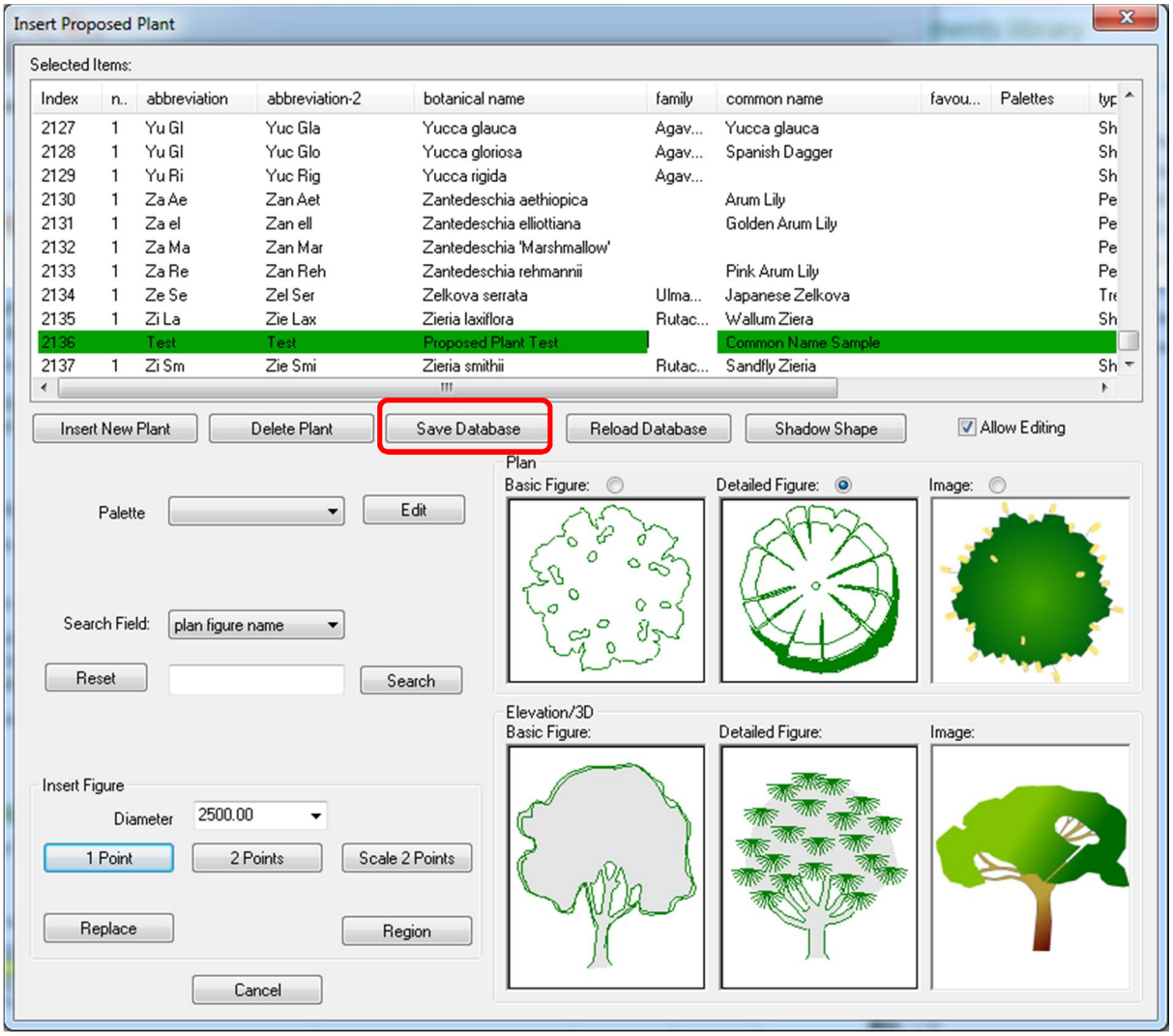

By default, LANDWorksCAD will browse all the Elevation Plants from the directory:

- C:\Users\Public\LANDWorksCAD-v6\Figures\Plants -E(Windows Vista, 7 and 8)
- C:\Documents and Settings\All Users\LANDWorksCAD-v6\Figures\Plants-E (Windows XP)

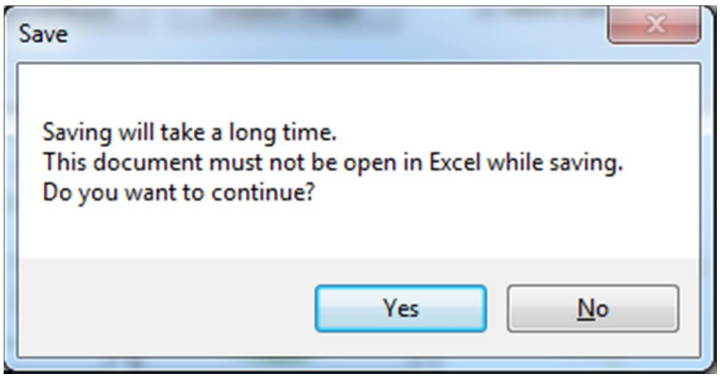



You can browse to a different directly by clicking on the Browse... button.

Once you are finished adding the plant details and figures, click on Save Database

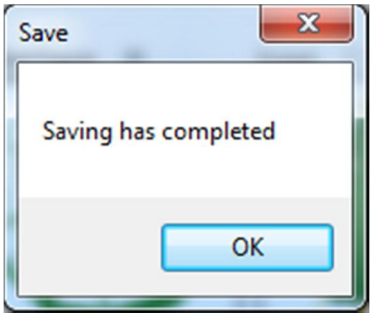

Insert Proposed Plant
Selected Items:
Index n.. abbreviation abbreviation-2 botanical name family common name favou... Palettes typ
2127 1 Yu Gl Yuc Gla Yucca glauca Agav... Yucca glauca Sh
2128 1 Yu Gl Yuc Glo Yucca gloriosa Agav... Spanish Dagger Sh
2129 1 Yu Ri Yuc Rig Yucca rigida Agav... Sh
2130 1 Za Ae Zan Aet Zantedeschia aethiopica Arum Lily Pe
2131 1 Za el Zan ell Zantedeschia elliottiana Golden Arum Lily Pe
2132 1 Za Ma Zan Mar Zantedeschia 'Marshmallow' Pe
2133 1 Za Re Zan Reh Zantedeschia rehmannii Pink Arum Lily Pe
2134 1 Ze Se Zel Ser Zelkova serrata Ulma... Japanese Zelkova Tr
2135 1 Zi La Zie Lax Zieria laxiflora Rutac... Wallum Ziera Sh
2136 Test Test Proposed Plant Test Common Name Sample
2137 1 Zi Sm Zie Smi Zieria smithii Rutac... Sandfly Zieria Sh
Insert New Plant
Delete Plant
Save Database
Reload Database
Shadow Shape
Allow Editing
Plan
Basic Figure:
Detailed Figure:
Image:
Palette
Edit
Search Field:
plan figure name
Reset
Search
Elevation/3D
Basic Figure:
Detailed Figure:
Image:
Insert Figure
Diameter
2500.00
1 Point
2 Points
Scale 2 Points
Replace
Region
Cancel

Once you click the Save Database button, the following warning message will display.

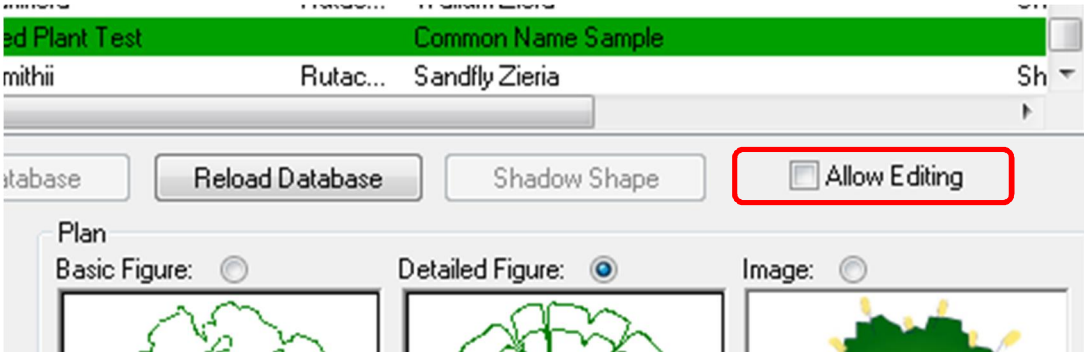



Click on Yes to save the database changes, making sure the Landworksplantdatabase.xls is not manually opened when saving.

When saving the plant database is completed, the following confirmation dialog box will show:




Next, make sure you uncheck the 'Allow Editing' checkbox to make sure we don't accidentally make any more changes to the plant database.




You may also click on the 'Reload Database' button to make sure the changes have been saved.

## Editing the Landworksplantdatabase.xls Excel file

The LANDWorksCAD Plant Database is stored on a file named LANDworksplantdabase.xls

- C:\Users\Public\LANDWorksCAD-v6\ (Windows Vista, 7 and 8)
- C:\Documents and Settings\All Users\LANDWorksCAD-v6\ (Windows XP)

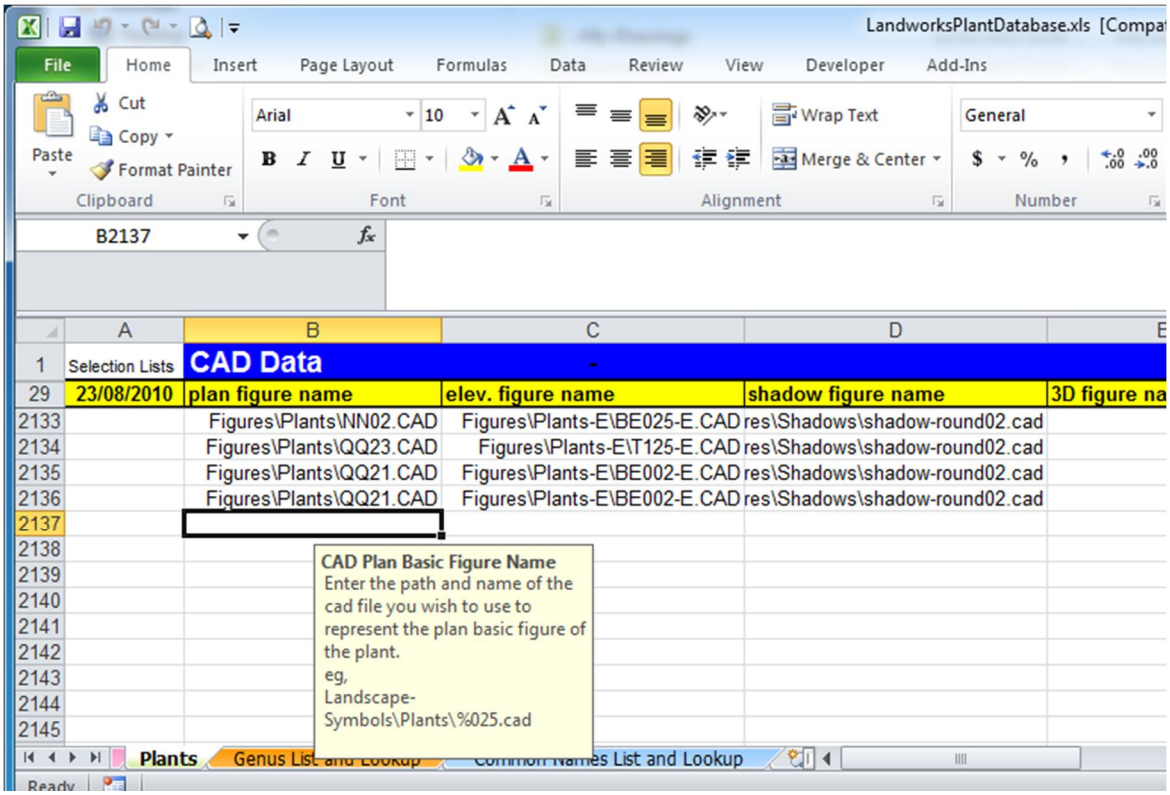
The file name must remain the same.

### Note

Make sure LANDWorksCAD is not running, or at least the Insert Concept, Insert Existing or Insert Proposed Plant command is not opened.

The easiest way to add plants directly to the Excel file is to move to the end of the list, then start typing the relevant information about the plant.

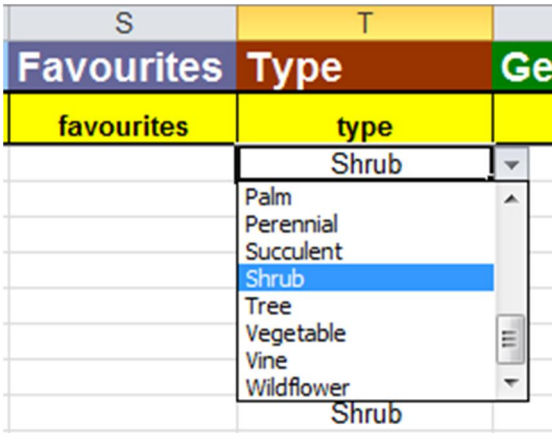
In the example below, we are adding a new Proposed Plant (Plant Excel Sheet) starting at the end of the list.



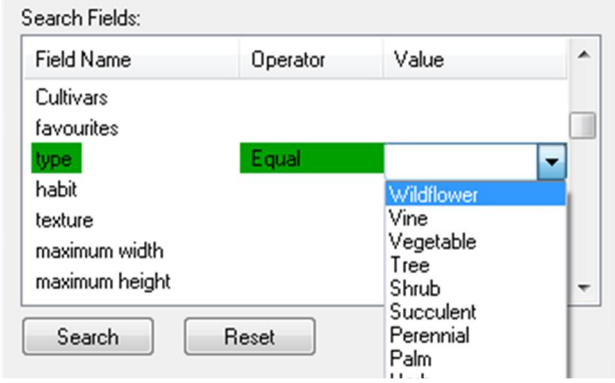

For more information about the columns, please refer to Appendix 1 – The LANDWorksCAD Plant Database.

# Appendix 4 – Working with the Selection Data

When working on your LANDWorksCAD plant database many columns let you select from a drop-down list of data. An example of this is shown below.




This list is also used when searching for plants in the Insert Plant commands in LANDWorksCAD, as shown below.




This appendix explains how to work with these lists of selection data.

## Note

Everything in this appendix is specific to Excel. The selection data lists cannot be edited in LANDWorksCAD.

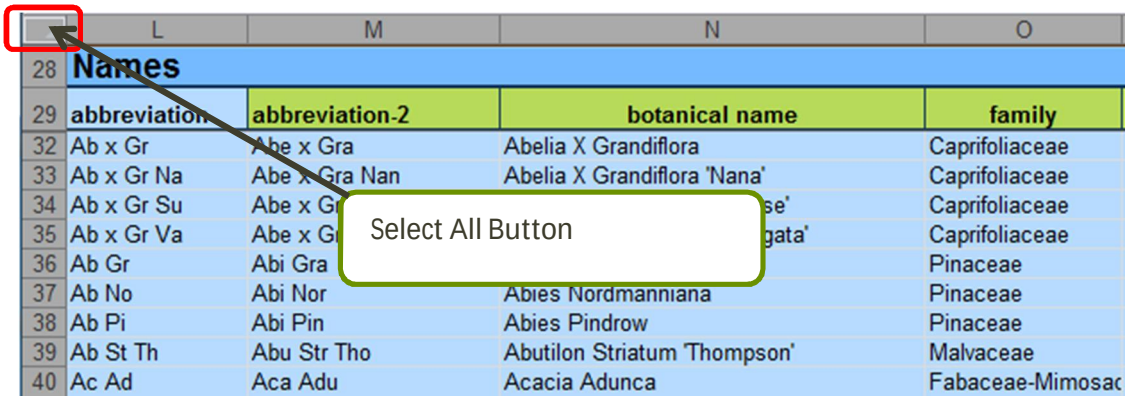
## Displaying the Hidden Selection Data

The selection data is contained in rows 2-27. Rows 1-27, 30 and 31 are initially hidden in the supplied database. This is to prevent users from accidentally, or intentionally, editing the data contained in these rows before they really know what the data is for. These rows can, however, be displayed without affecting the functionality of the database in any way.

To display these hidden rows, do the following:

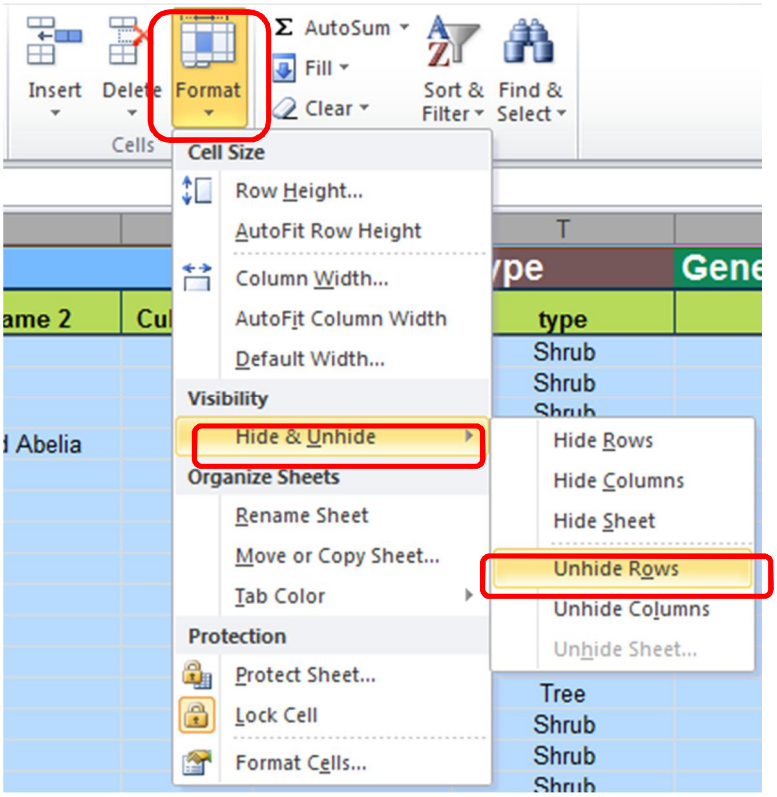
1. Open the LandworksPlantDatabase.xls file.

2. Select all rows by clicking on the "Select All" button as shown below:

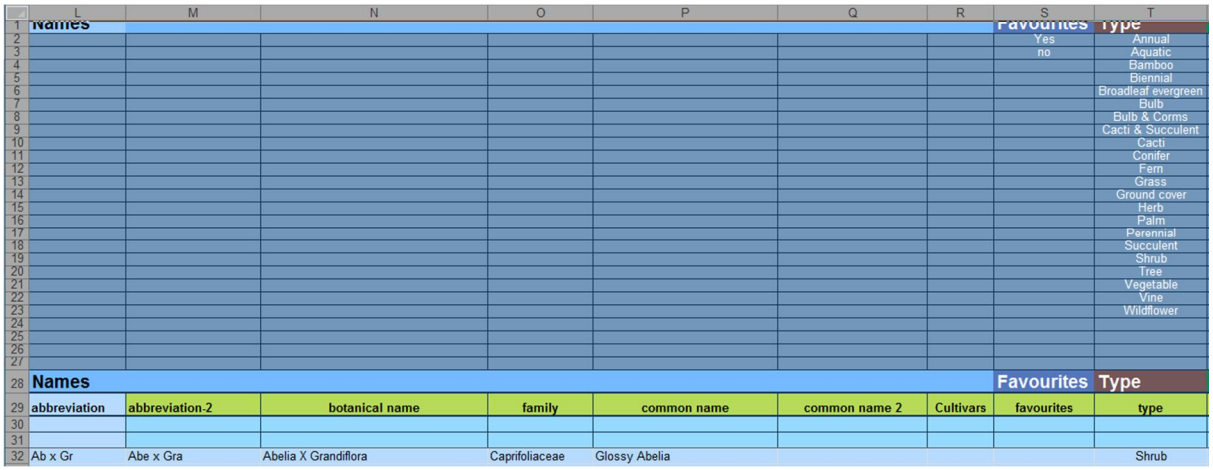



3. The entire worksheet will be highlighted – all cells will have a grey background.

4. Select from Home tab > Cells > Format > Hide & Unhide > Unhide Rows




5. Rows 1-31 will be displayed (you may have to scroll up to see them)



6. To remove the highlighting click in any cell.

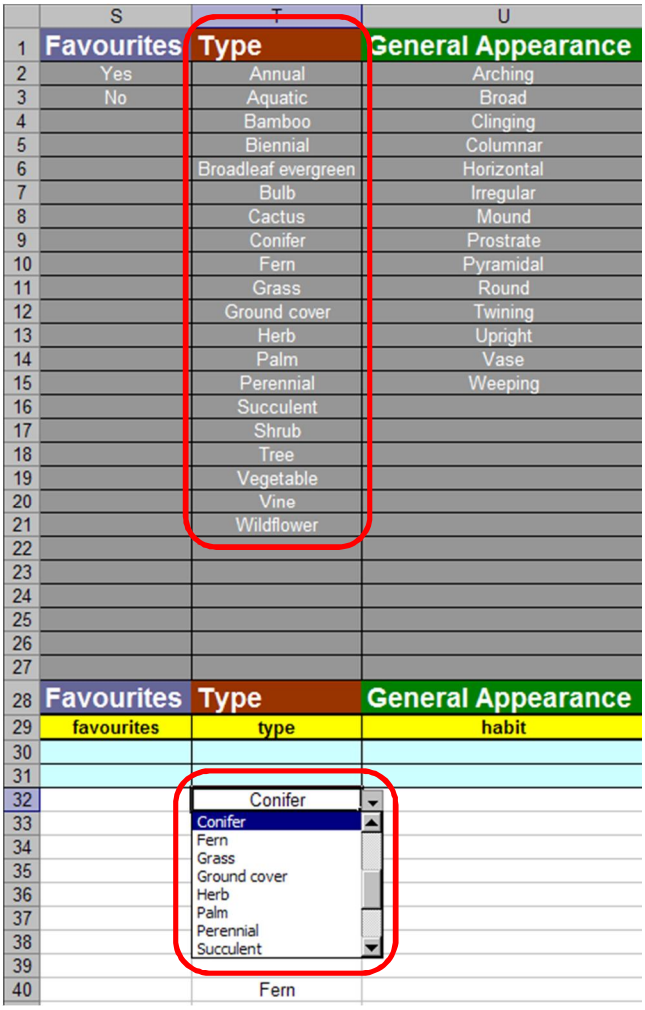
| | L | M | N | O | P | Q | R | S | T |
|---|---|---|---|---|---|---|---|---|---|
| 1 | Names | | | | | | | Favourites | Type |
| 2 | | | | | | | | Yes | Annual |
| 3 | | | | | | | | no | Aquatic |
| 4 | | | | | | | | | Bamboo |
| 5 | | | | | | | | | Biennial |
| 6 | | | | | | | | | Broadleaf evergreen |
| 7 | | | | | | | | | Bulb |
| 8 | | | | | | | | | Bulb & Corms |
| 9 | | | | | | | | | Cacti & Succulent |
| 10 | | | | | | | | | Cacti |
| 11 | | | | | | | | | Conifer |
| 12 | | | | | | | | | Fern |
| 13 | | | | | | | | | Grass |
| 14 | | | | | | | | | Ground cover |
| 15 | | | | | | | | | Herb |
| 16 | | | | | | | | | Palm |
| 17 | | | | | | | | | Perennial |
| 18 | | | | | | | | | Succulent |
| 19 | | | | | | | | | Shrub |
| 20 | | | | | | | | | Tree |
| 21 | | | | | | | | | Vegetable |
| 22 | | | | | | | | | Vine |
| 23 | | | | | | | | | Wildflower |
| 24 | | | | | | | | | |
| 25 | | | | | | | | | |
| 26 | | | | | | | | | |
| 27 | | | | | | | | | |
| 28 | Names | | | | | | | Favourites | Type |
| 29 | abbreviation | abbreviation-2 | botanical name | family | common name | common name 2 | Cultivars | favourites | type |
| 30 | | | | | | | | | |
| 31 | | | | | | | | | |
| 32 | Ab x Gr | Abe x Gra | Abelia X Grandiflora | Caprifoliaceae | Glossy Abelia | | | | Shrub |

## Note

Saving the database with these rows displayed has no effect on the functionality of the database.

The formatting of these rows is white text with a grey background, but this is for identification only; the colours can be changed to suit you.

As an example of how this selection data works, scroll across to the Type column (T), click in the cell in row 32 and then click on the small “down arrow” that appears to the right of the cell, as shown below. The selection data in the list that appears is obtained from rows 2-21 in that column. This is the way it works for all columns; the data is obtained from within rows 2-27 of the column selected.



## Editing the Existing Selection Data

### Changing the Data

You can change the selection data by editing the existing text in the cells and/or adding new data to the empty cells. To do this, simply click in the cell and type in what you want.

LANDWorksCAD does not sort the data in any way, so if you want it listed alphabetically you must do it yourself by re-arranging the cells.

When you have finished editing your selection data, the edited data is immediately available in the drop-down lists within Excel.

**Note**

The drop-down lists in LANDWorksCAD will not be updated until you have saved your database and then either restarted LANDWorksCAD or reloaded the database.

When you have finished editing your selection data you don't have to hide the rows again. They can be left unhidden and LANDWorksCAD will still read the data correctly.

**Important Note**

1. The data can only reside in rows 2-27 and these row numbers are fixed
2. You MUST NOT insert more rows above row 28, the section headings. If you do, the "Insert Plant" commands in LANDWorksCAD will not work properly. For now, this means you are limited to a maximum of 26 items in any list, although this may change in the future.

After editing the selection data, don't forget to save your database.

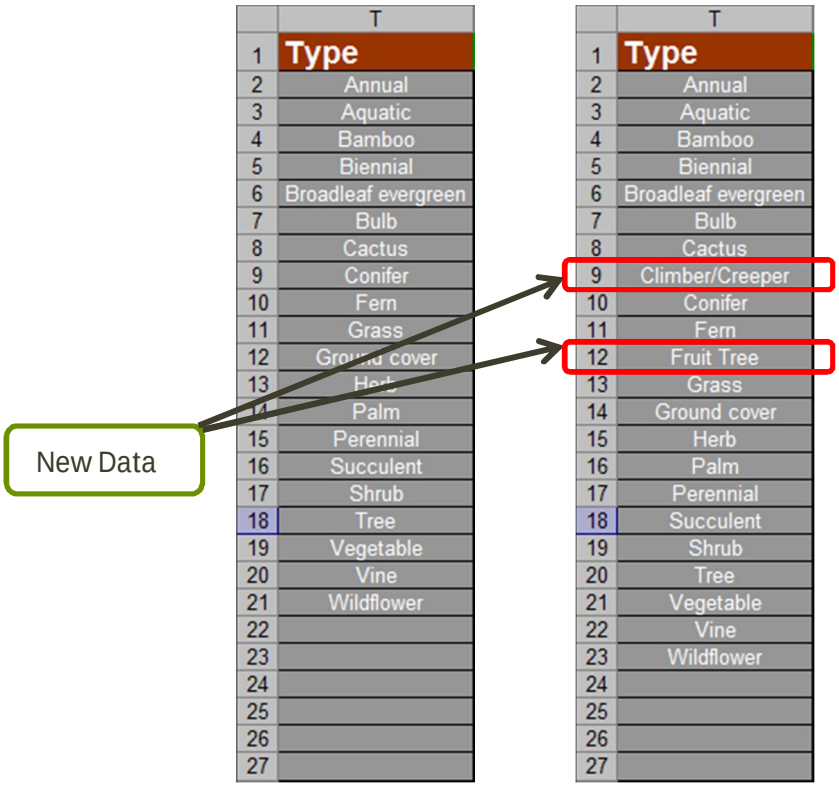
### Expanding the Data

If you have not expanded the selection data, i.e., you have only edited the existing text and/or re-arranged the existing cells, then you can save your database and the new selection data will work fine in LANDWorksCAD. However, if you have expanded the selection data by entering text in the empty cells, the selection data range must be updated to include these new cells. The following example explains how to do this.

This example uses the Type column (T), but the concept applies equally to all columns that have selection data lists.

In this example, two new entries have been added to the Type list: “Climber/Creeper” and “Fruit Tree”.

The standard selection data for column T is shown on the left below and includes rows 2 – 21. The new selection data is shown on the right and includes rows 2 –23. It includes the two new entries and the data has been re-arranged alphabetically.



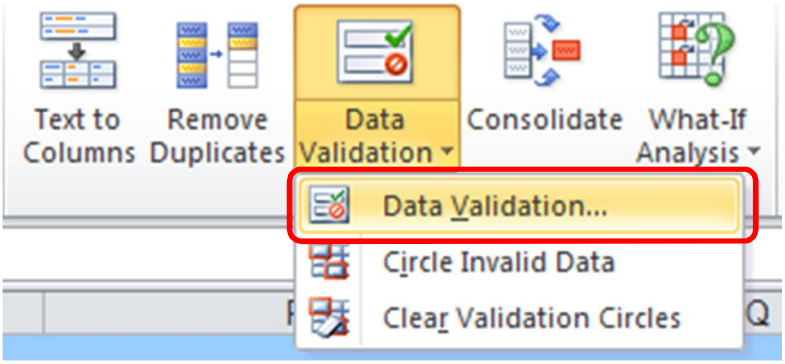

| | T |
|---|---|
| 1 | Type |
| 2 | Annual |
| 3 | Aquatic |
| 4 | Bamboo |
| 5 | Biennial |
| 6 | Broadleaf evergreen |
| 7 | Bulb |
| 8 | Cactus |
| 9 | Conifer |
| 10 | Fern |
| 11 | Grass |
| 12 | Ground cover |
| 13 | Herb |
| 14 | Palm |
| 15 | Perennial |
| 16 | Succulent |
| 17 | Shrub |
| 18 | Tree |
| 19 | Vegetable |
| 20 | Vine |
| 21 | Wildflower |
| 22 | |
| 23 | |
| 24 | |
| 25 | |
| 26 | |
| 27 | |

| | T |
|---|---|
| 1 | Type |
| 2 | Annual |
| 3 | Aquatic |
| 4 | Bamboo |
| 5 | Biennial |
| 6 | Broadleaf evergreen |
| 7 | Bulb |
| 8 | Cactus |
| 9 | Climber/Creeper |
| 10 | Conifer |
| 11 | Fern |
| 12 | Fruit Tree |
| 13 | Grass |
| 14 | Ground cover |
| 15 | Herb |
| 16 | Palm |
| 17 | Perennial |
| 18 | Succulent |
| 19 | Shrub |
| 20 | Tree |
| 21 | Vegetable |
| 22 | Vine |
| 23 | Wildflower |
| 24 | |
| 25 | |
| 26 | |
| 27 | |

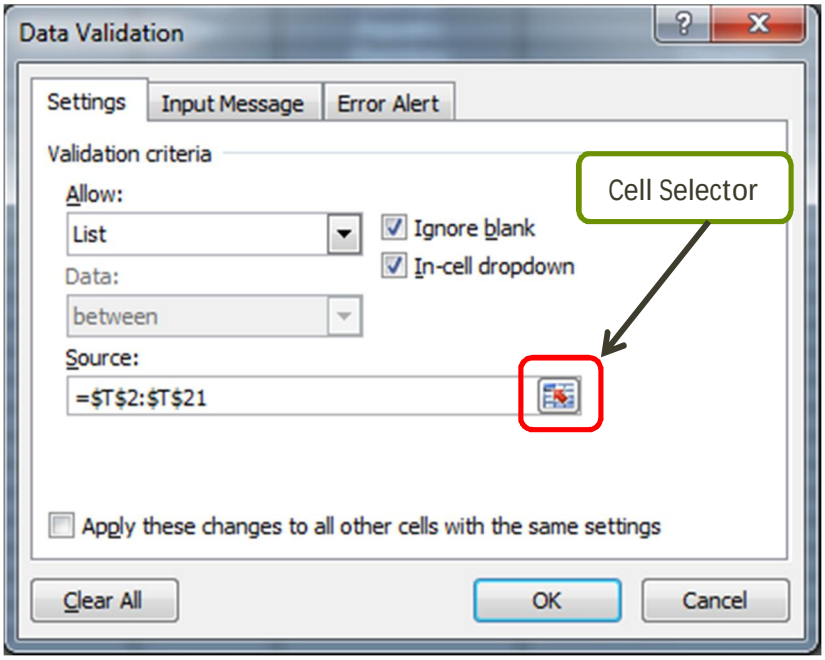
The following steps were used to update the selection data range for this example:

1. Click in the cell in row 32 for column T.

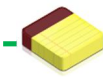
2. Select from the Data tab > Data Validation > Data Validation...



3. Select the Settings tab on the “Data Validation” dialog box that appears, as shown below.

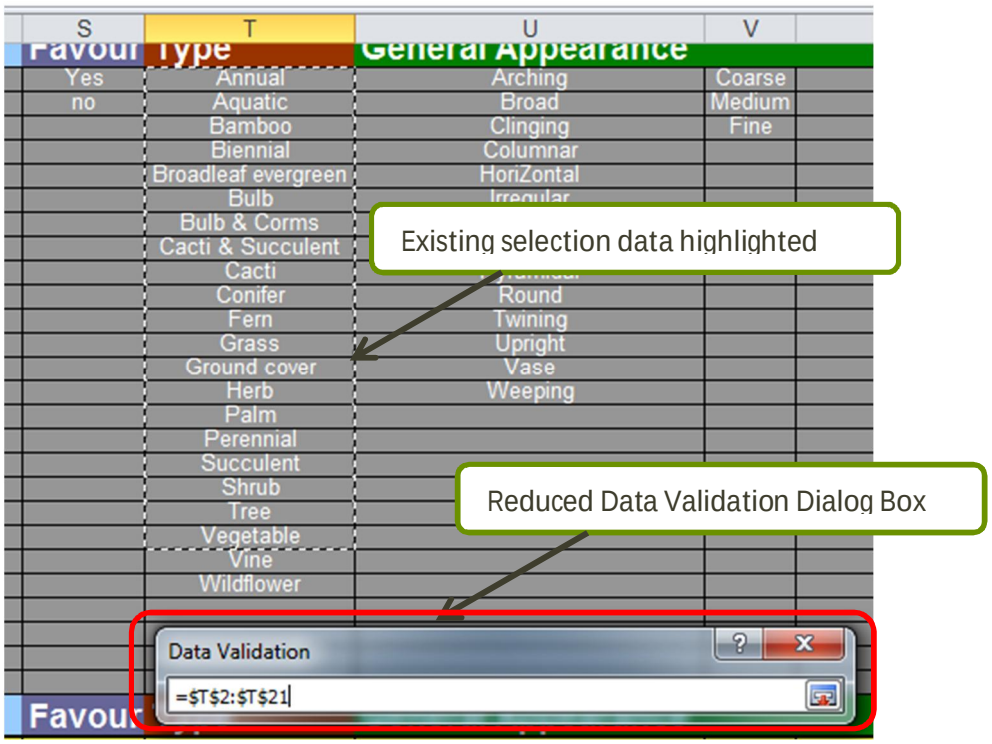



4. The “Allow” box is set to allow a “list” to be selected from.
5. The “Source” box, as indicated above, shows the cells that contain the list, ie, the selection data. In this example this is cells T2 – T21. (Ignore the $ signs; they are inserted automatically by Excel)
6. Click on the “Cell Selector” as shown above.
7. The “Data Validation” dialog box will be reduced in size and the existing selection data highlighted, as shown below.

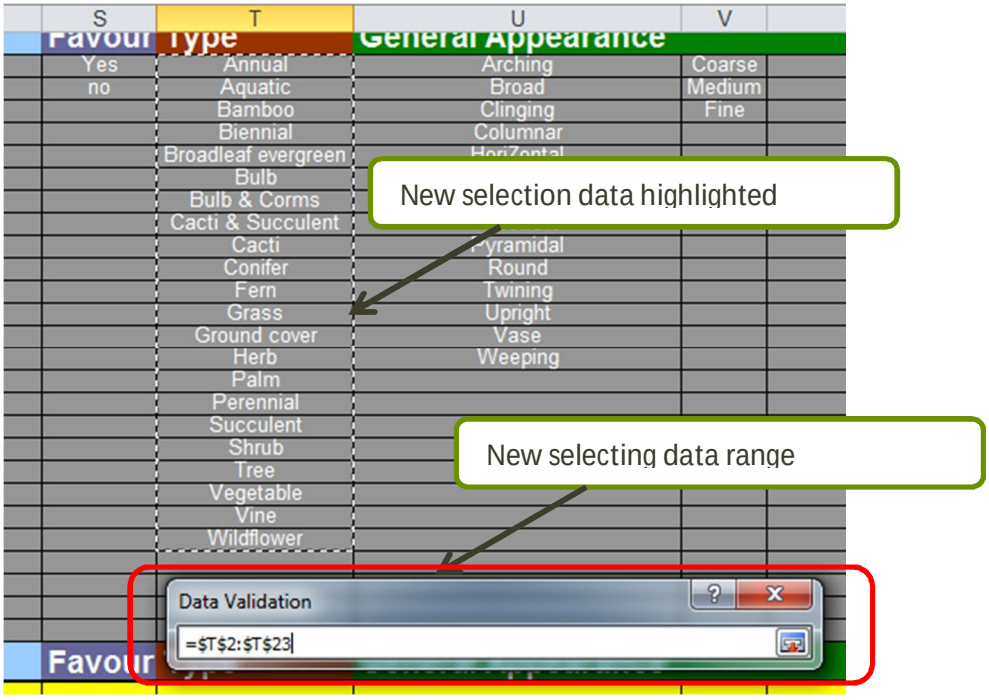


## Note

The “existing” selection data range may alter from the original depending on how you edited the data.

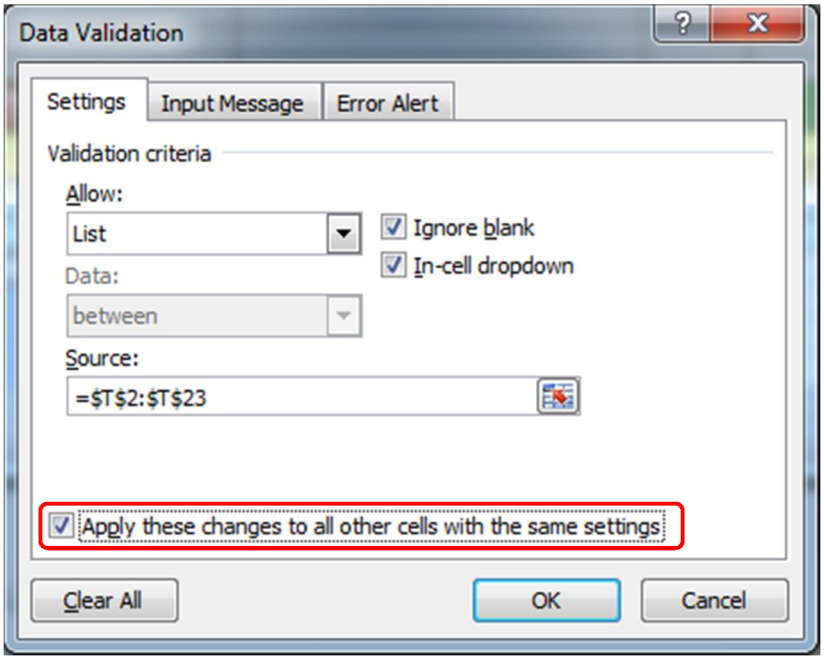



8. Highlight the new selection data by dragging your cursor over the cells until the flashing highlight rectangle includes the new data, as shown below. The cell numbers in the reduced Data Validation dialog box will adjust accordingly.



9. Click on the “Cell Selector” again, as shown below. This will enlarge the “Data Validation” dialog box again.

10. Tick the box indicated below to ensure this new selection data applies to all the other cells in the column. The other cells in column T are highlighted.




11. Click OK to finish.

All cells in column T now list the two new entries in their selection data list.

## Assigning Selection Data to New Columns

If you add a new column to your database, either of two things will happen to the selection data for that column:

1. There will be no selection data, ie, rows 2–27 for that column will be empty, so the selection data list will be empty, or
2. The new column will have inherited the selection data from an adjacent column so the selection data list will be incorrect because it is pointing to the wrong column.

In both cases, the correct data will have to be entered into the cells and then the selection data lists updated to look at it, using the same technique described in the previous section, Expanding the Data.

## Note

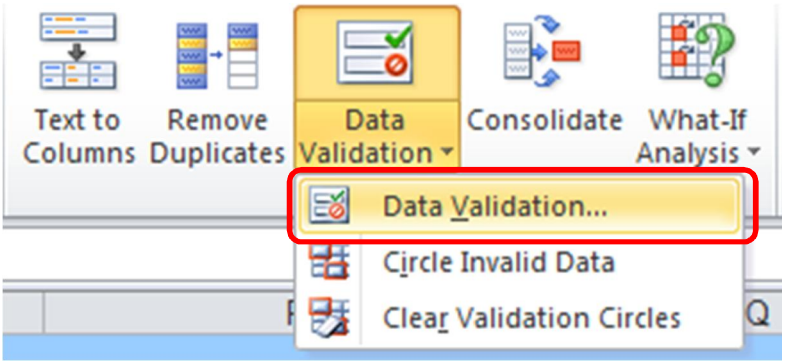
The instructions in this section do not cover every function of Data Validation within Excel. For more details refer to the Excel Help system or contact us.

### Removing the Selection Data

There may be cases where you do not want the data for a particular column to be restricted to a pre-defined list; you want to be able to enter any data into the cells. To do this you must remove the "list" restriction of Excel's Data Validation function that is used by LANDWorksCAD.

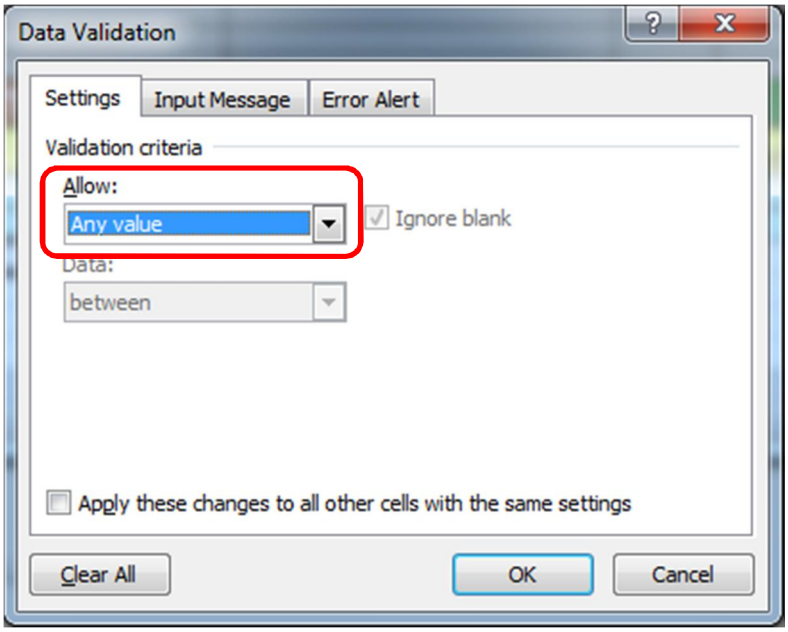
This is done as follows:

1. Select the cells you want to unrestrict. This may be a small selection of cells or the entire column.
2. Select from the Data tab > Data Validation > Data Validation...




3. Depending on the cells selected, you may get a message that some of the cells do not have Data Validation settings & you'll be asked if you want to extend the settings to these cells - click "Yes".

1. In the "Settings" tab, the "Allow" field will show the word “List”. Change this to read “Any value” & then click OK.




2. You can now enter any text you want.
3. Save the database & restart LANDWorksCAD or reload the database for this new setting to be available.

# Appendix 5 – Sorting the Plant Database in Excel

The plant database supplied with LANDWorksCAD has the plants sorted alphabetically by their Botanical name, but this can be changed; the plants can be sorted by any column you want.

However, the database can only be sorted in Excel; it cannot be sorted in LANDWorksCAD. LANDWorksCAD simply displays the plants in whatever order they are in Excel.

The secret to sorting the plant database is to NOT select the entire spreadsheet, as is normally done when sorting a spreadsheet. This is because rows 1–31 should not be included in any sorting; they must remain where they are for the spreadsheet to work correctly with LANDWorksCAD.

The steps to sorting the database are as follows:

1. Determine by what column you want the data sorted and note the column letter, e.g., to sort by Botanical Name it is column N, to sort by Type it is column T, etc.
2. Scroll up until you can see row 32. Your screen should look something like the image below.

| | K | L | M | N | O |
|---|---|---|---|---|---|
| 28 | | Names | | | |
| 29 | number of 2d figures | abbreviation | abbreviation-2 | botanical name | family |
| 32 | 1 | Ab gr | | Abies grandis | |
| 33 | 1 | Ac ba | | Acacia baileyana | Fabaceae, sub fam. Mimosoide |
| 34 | 1 | Ac bu | | Acacia buxifolia | Fabaceae, sub fam. Mimosoide |
| 35 | 1 | Ac de | | Acacia decurrens | Fabaceae, sub fam. Mimosoide |
| 36 | 1 | Ac sa | | Acacia sowdenii | |
| 37 | 1 | Ac sp | | Acacia spetabilis | |
| 38 | 1 | Ac re | | Acer rubrum | |
| 39 | 1 | Ac he | | Actinotus helianthi | Apiaceae |
| 40 | 1 | Ad ra | | Adiantum hispidulum | Adiantaceae |
| 41 | 1 | Ae pa | | Aesculus pavia | |
| 42 | 1 | Ag pr | | Agapanthus proecox | |
| 43 | 1 | Al to | | Allocasuarina torulosa | Casuarinaceae |
| 44 | 1 | Al gl | | Alnus glutinosa | |
| 45 | 1 | Am gr | | Amelanchia grandiflora | |
| 46 | 1 | An co | | Angophora costata | |
| 47 | 1 | An ma | | Anigozanthos manglesii | Haemodoraceae |

3. Click on row 32's identifying number. This will highlight row 32 as shown below.

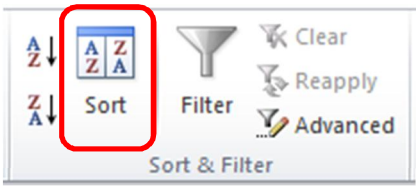
| | K | L | M | N | O |
|---|---|---|---|---|---|
| 28 | | Names | | | |
| 29 | number of 2d figures | abbreviation | abbreviation-2 | botanical name | family |
| 32 | 1 | Ab gr | | Abies grandis | |
| 33 | 1 | Ac ba | | Acacia baileyana | Fabaceae, sub fam. Mimosoide |
| 34 | 1 | Ac bu | | Acacia buxifolia | Fabaceae, sub fam. Mimosoide |
| 35 | 1 | Ac de | | Acacia decurrens | Fabaceae, sub fam. Mimosoide |
| 36 | 1 | Ac sa | | Acacia sowdenii | |
| 37 | 1 | Ac sp | | Acacia spetabilis | |
| 38 | 1 | Ac re | | Acer rubrum | |
| 39 | 1 | Ac he | | Actinotus helianthi | Apiaceae |
| 40 | 1 | Ad ra | | Adiantum hispidulum | Adiantaceae |
| 41 | 1 | Ae pa | | Aesculus pavia | |
| 42 | 1 | Ag pr | | Agapanthus proecox | |
| 43 | 1 | Al to | | Allocasuarina torulosa | Casuarinaceae |
| 44 | 1 | Al gl | | Alnus glutinosa | |
| 45 | 1 | Am gr | | Amelanchia grandiflora | |
| 46 | 1 | An co | | Angophora costata | |
| 47 | 1 | An ma | | Anigozanthos manglesii | Haemodoraceae |

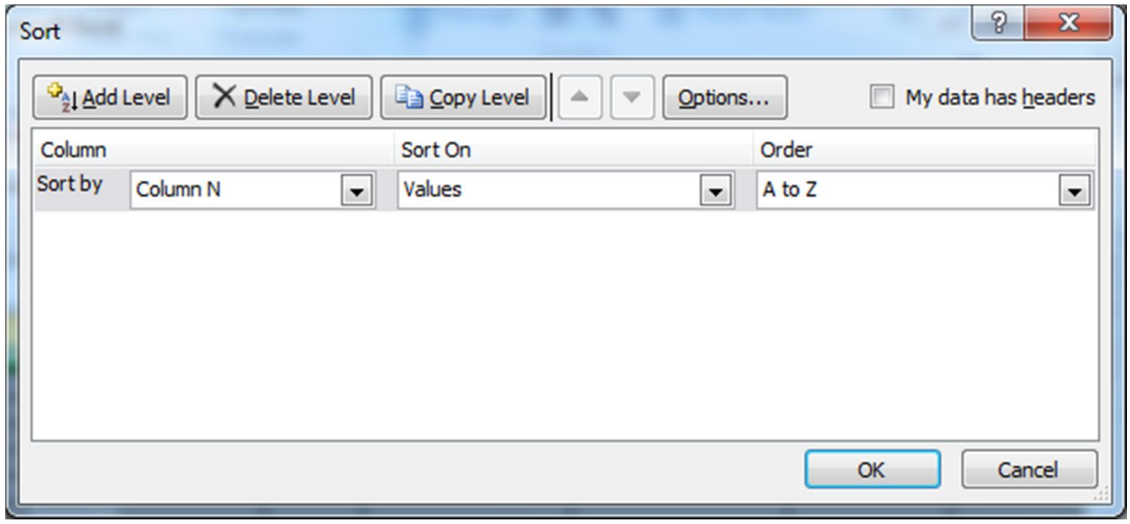
4. Scroll down the screen until you can see the last row of plant data.
5. Hold down the Shift key and click the last row's identifying number.

6. This will highlight all the rows from 32 to the last row of data, as shown below. Here the last row of data is 266.

| | K | L | M | N | O |
|---|---|---|---|---|---|
| 28 | | Names | | | |
| 29 | number of 2d figures | abbreviation | abbreviation-2 | botanical name | family |
| 254 | 1 | To bo | | Toxus boccata | |
| 255 | 1 | Tr sp | | Tricocereous spachianus | |
| 256 | 1 | Tr pu | | Tricocereus purpur | |
| 257 | 1 | Tr co | | Tristania conferta | |
| 258 | 1 | Tr co | | Tristania conferto | |
| 259 | 1 | Ts he | | Tsuca heterophylia | |
| 260 | 1 | Ts si | | Tsuga sieboldii | |
| 261 | 1 | Ul pr | | Ulmus procera | Ulmaceae |
| 262 | 1 | Ul sa | | Ulmus sarniensis | |
| 263 | 1 | Vi he | | Viola hederacea | |
| 264 | 1 | Wis fl | | Wisteria florabunda | |
| 265 | 1 | Wo bi | | Wodyetia bifurcata | |
| 266 | 1 | Xa au | | Xanthorrhoea australis | |
| 267 | | | | | |
| 268 | | | | | |
| 269 | | | | | |

7. Select Data > Sort & Filter > Sort. The following dialog box will be displayed.




8. Click in the first "Sort by" field and select the column you want to sort the data by, eg, column N = Botanical Name, column T = Type, etc.
9. Make sure the "Ascending" option is selected, as shown above. So the data is sorted from A to Z.
10. Make sure the "My data has headers" option is not selected.
11. Click the OK button.
12. The plants will now be sorted in alphabetical order by the column you selected. You may have to scroll back up to see the results.
13. Save your database. The next time you start LANDWorksCAD or reload the database the plants will be listed in this order.

14. If you add more plants to the database it's best to insert them so the plants remain in alphabetical order. If they get mixed up again, simply repeat the steps listed here to re-sort them.

## Note

The dialog box shown above gives you the ability to sort the data by several columns; however this functionality is not covered in this manual.